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HP Professional

OCTOBER 1998

HP-UX

Windows NT

MPE/iX

A BCI PUBLICATION

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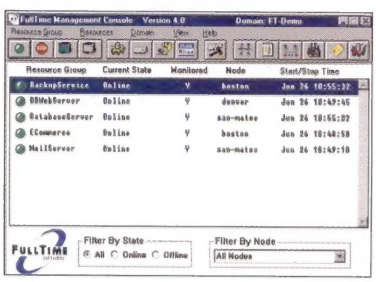

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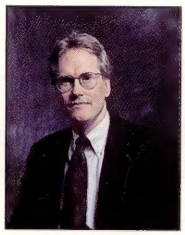

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"You may not realize it, but the first pipeline of distributed computing has already been laid." That's a statement I first made about e-mail in a feature story in the August 1994 issue of this magazine. At the time, it was a dramatic turn of a phrase from a then technical editor. But several years later, the observation has turned out to be a prophetic prediction.

THE P-WORD

At one time, IBM's PROFS, Digital's VMSMail and All-In-One, as well as HP's HPDesk on the HP 3000 provided millions of employees in large enterprises with a way of keeping in touch with each other and the outside world. But sadly, they were — altogether now — proprietary systems. At the time of that article's writing, LAN-based e-mail systems were all the rage. You're familiar with the usual suspects: cc:Mail and MS Mail; or perhaps you remember Beyond Mail.

But smart CIOs and IT Managers have figured it out by now. They aren't hung up on e-mail, proprietary or otherwise; they've built or are building enterprise messaging systems. That is, systems serving the enterprise built on a single e-mail or messaging platform. Take it from Lou True, the CIO of Siebe Environmental Controls who says that ROI is outstanding. "We have saved thousands of dollars on copier paper, mailing labels, postage, phone charges and productivity." What self-respecting number cruncher wouldn't like to hear that?

Now that the messaging solution is a hit with the executive staff, Mr. True's plans include going to a server-based calendaring/scheduling system with e-mail using OpenMail and MS Outlook clients. But OpenMail isn't the only messaging game in town. Although groupware products like IBM/Lotus' Notes/Domino, Microsoft's Exchange and Novell's GroupWise work pretty well within an OpenMail environment, they have evolved into messaging systems of their own.

GROUP GROPE

According to the groupware gurus on record, from IBM/Lotus, Microsoft and Novell, in this month's cover story by Associate Editor, Ken Deats, these formerly humble groupware products now compete with HP's OpenMail. With Intel-based servers reaching a comparable level of performance (at lower cost) to their UNIX-based counterparts and the expanding capabilities of groupware, we've identified another trend. But here's where it gets interesting for HP users because HP and Microsoft have an agreement to sell Exchange on HP's NetServers.

So, is HP competing with itself? You bet! But don't think that OpenMail is as dead as DOS. As Richi Jennings, OpenMail's Technical Product Manager told us, "HP is not trying to convert happy OpenMail users — kicking and screaming — to Exchange." But, Compaq, HP's arch-rival these days, smelling blood, is intent on moving OpenMail users to Exchange on their hardware - notably Alpha boxes.

But before you say — "been there, done that" — read our story, "*Messaging and Groupware: A Collaboration*" on page 22 to get another perspective.

HP PROFILES IN COMPUTING

Because *HP Professional* brings you the information about HP's computing strategies, minus the hype and sound bites, I want to highlight next month's interview with Nick Earle, HP's worldwide marketing manager in HP's Enterprise System Group. Nick is known for two things: his candid remarks and a fiesty competitive spirit. And as the creator of the rather now famous HP "orange ad campaign," I'm sure you'll find it another interesting read that will help you put HP computing in perspective.

AT PRESS

NetServer Goes Uptime

HP has introduced its Mission Critical Server Suite that makes it the first server vendor to stake the claim of providing a 99.9 percent uptime commitment for Intel-based servers running Windows-NT. The suite is the first product to emerge from HP's also newly announced Mission Critical Windows NT Program.

The program encompasses key technologies, infrastructures and specialized services for providing end-to-end availability of Windows NT and Microsoft BackOffice-based environments. The Server Suite is a configuration of the new NetServer LXr 8000 rack-mount system, optimized for enterprise data centers, HP Critical Systems Support for Windows NT, TopTools and OpenView/ManageX and Windows NT Enterprise Server Edition.

The other component of the announcement is the introduction of the NetServer LPr, also a rack-mountable server in a space-efficient 2U design which allows up to 20 servers and 40 CPUs in a standard rack.

HP Supports A Novell Idea

The complete line of HP's NetServers now support Novell's NetWare 5 network operating system and HP has begun offering a network-management software solution based on NetWare 5. HP's endorsement of NetWare 5 is underscored by two related actions. First, a new software-management solution, called Global Network Operations Center (GNOC), which provides system-wide integration of cross-platform mainframe and distributed-system management and single-view monitoring can now be purchased from Novell in conjunction with HP. It delivers better management functionality by integrating NetServer systems, OpenView, NetWare 5, Novell's ManageWise and various third party solutions. And, HP and Novell are developing high-availability software that makes use of the collective power of NetServer systems, Novell's Replication Services, System Fault Tolerance III and Orion clustering capabilities.

AN EXPRESSWAY TO WEB SATISFACTION

HP has announced enhancements to its Web Quality of Service (QoS), first unveiled in May, by teaming with Cisco Systems (San Jose, Calif.) to create Dynamic LocalDirector (DLD), a tool that provides intelligent load balancing, consistent response time and optimized server usage for high-traffic Web sites.

The announcement comes as one lane on HP's roadmap to work closely with application, database and networking partners to build the Web "expressway," with a tag line of allowing "businesses and consumers to bypass congested Internet traffic."

The goal, according to Jim Zepp, HP's Web QoS product marketing manager, is to allow "business managers to host a business on the Internet and deliver consistently good customer service, [by] building an end-to-end expressway that integrates management and measurement technologies.

"In the past, what [administrators] had were tools that measure and manage their environment, but not so much to control it," he adds. The combined HP/Cisco offering, DLD, is an integration of Cisco's LocalDirector and HP's Service Control, which provides peak usage management and management of user and service classes.

DLD's design is to control the dynamic load balancing of Internet traffic between multiple HP-UX servers in a server farm based on feedback provided by ServiceControl. That feedback is delivered directly from those servers to the LocalDirector, creating a transparent, intelligent Web QoS platform. DLD hides the complexity of a multiple server environment by allowing them to appear as a single server or IP address.

"We're integrating server and network technology together for the first time to deliver end-to-end quality of service," says Zepp.

E-COMMERCE SECURITY EXPORTS OK'D

The Clinton administration finally liberalized export controls on encryption products and HP says they're all for it.

U.S. manufacturers can now export some products with stronger levels of encryption. In addition to VerSecure, HP's Internet security hardware platform, which already has U.S. export approval, HP now will have greater flexibility to deliver other e-commerce solutions to customers worldwide.

These include: Changengine, which provides the foundation for organizations to create and evolve flexible business solutions that map to business processes; HP Praesidium/Authori-zation Server, which provides secure access control for extranet and intranet business processes and VirtualVault, a secure Web transaction server that connects enterprise applications and databases to clients on the Internet.

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Over One Billion Served

HP has achieved a SPECweb98 benchmark of 13,811 operations per second for its HP 9000 V2250 Enterprise Server, which translates into the ability to handle more than 1 billion HTTP requests per day. That's more than, according to HP, all the traffic for the top 10 Internet domains combined.

HP raised the performance bar to new heights on a 16-way, 64-bit, 240MHz PA-8200 CPU which outperformed systems from IBM, SUN, DEC and SGI. And, it delivered a 66 percent performance advantage over IBM's S70, its closest competitor. The HP V2250 used Gigabit Ethernet and a full, 240-second RFC1122 time wait and a standard solution without a Web accelerator.

This performance adds to HP's other industry leading SPECweb96 results for K-Class midrange systems and D-Class low-end.

The Web Can See Clearly Now

HP and Allaire Corp. (Cambridge, Mass.) have combined to add depth and clarity to what potential shoppers see on the Web. HP has created a component for Allaire's ColdFusion and HomeSite (products that enable developers to build high-volume, transaction oriented Web sites) that will aid developers in defining and inserting OpenPix-ignited image tags into their e-commerce applications.

Called a "visual tool extension" (VTX), it creates an enhanced image tag with extended attributes for defining the OpenPix-ignited image and how it should be displayed to end users. A VTX is an open technology for extending the ColdFusion and HomeSite development environments with additional functionality for enhancing developer's abilities.

urls:image.hp.com; allaire.com/ecommerce

EXPANDED COVISIONS

Capitalizing on a successful worldwide launch in June, HP has expanded the Covision program by adding 15 alliances.

Covision combines HP products with innovative Internet providers and HP Channel Partners to make it easier to provide customers with Internet products and services. (See News & Views, August, 1998).

New Application Partners
Apexx Technology, Inc. (Boise, Idaho), BackWeb Technologies (San Jose, Calif.), Elemental Software (Carlsbad, Calif.), F5 Labs, Inc. (Seattle, Wash.), Resonate, Inc. (Mountain View, Calif.), Trend Micro, Inc. (Cupertino, Calif.), WebTrends Corp. (Portland, Ore.) and WebManage Technologies, Inc. (Nashua, N.H.).

New Channel Partners
CyberSource Corp. (San Jose, Calif.), Meridian Technology Group (Inwood, N.Y.), Pro-Tech Business Systems, LLC (Marietta, Ga.) and PSINet (Herndon, Va.).

url:www.hp.com/go/ covision

PRAESIDIUM'S RAINBOW

Rainbow Technologies, (Irvine, Calif.) provider of security solutions for Internet and E-commerce applications has joined HP's Praesidium partner program. Rainbow brings 14 years experience in applied cryptography and its CryptoSwift II public-key cryptographic accelerator card to the partnership. CryptoSwift II offloads security calls from the CPU, can handle 200 transactions per seconds and perform a reference RSA signature in five milliseconds.

url:www.hp.com/security

HP/NEC COMBINE ON HP-UX FOR IA-64

In a cross-continental compact, HP and Tokyo-based NEC have announced an agreement to jointly optimize HP-UX system performance on IA-64. NEC is bringing "significant software engineering resources to the project," calling it the largest UNIX system software collaboration by NEC and a partner.

NEC spokesperson, Chris Shimuzu responded to several questions concerning the partnership.

Q: What resources will NEC bring to the project and what expertise do they bring that HP does not already have?

A: NEC has developed and sold mainframe computers domestically and overseas for more than 20 years and provided many extensive systems to our customers. Futhermore, we have developed and promoted UNIX, since [UNIX] was introduced for the first time and we are one of the first-to-market vendors to make SVR4.2MP product. Both mainframe and UNIX operating system engineers work on this project and especially ... we are contributing our original expertise in mainframe.

Q: Give us a short technical description of some of the enhancements NEC intends to bring to HP-UX.

A: NEC will work on porting HP-UX core parts such as memory, process, core I/O, core file management to Merced chips in this project. They are the common, basic functions both in UNIX and mainframe operating systems and it is possible to apply the same technique.

In addition, there is the project of robust kernel besides this project, which covers self-recovery functions to improve HP-UX's reliability [using] NEC's mainframe technology.

Q: How do HP-UX and the IA-64 chip figure into NEC's future product line?

A: We consider the IA-64 as a key technology platform for next generation and NEC is planning HP-UX on our NEC IA-64 based hardware.

Q: What does this collaboration mean to HP's penetration into the Japanese market and are there any other collaborative efforts on the horizon?

A: The big customers in Japan strongly require the build of mission-critical UNIX systems. NEC has been enhancing mainframe functions satisfying such requirements. There is also a move to introduce Open system UNIX servers for mainframe systems such as banking systems. By developing core kernel part of HP-UX, HP-UX's response (such as bug fix, or functional additions) will be better for mission-critical systems and HP-UX will be stronger in the market.

MOTIF SUPPORT MIGRATES

Integrated Computer Solutions (ICS; Cambridge, Mass.) has announced an agreement with The Open Group that will migrate Motif technical support for existing Open Group support customers to ICS. Those customers generally include large hardware and software vendors and end users — users who have licensed the Motif source code.

ICS has been in the business of supporting UNIX and Motif applications since 1988. "We've long been one of the leaders in the game," says Mark hatch, ICS' general manager. According to Hatch, the process by which those customers receive support will remain the same. "The same phone line continues to ring. It just comes through here now."

To accommodate the change, ICS has added several new Motif specialists to their staff, several of whom came from the ranks of Motif developers from the Open Group. And, adds Hatch, even though the active database of Motif open support problems remains in the control of the Open Group, a copy, updated as necessary, has been migrated to ICS' headquarter, "just 3 blocks down the street from the Open Group's office."

The Open Group is a vendor-neutral, international consortium of more than 200 members, including leaders in government, academia, finance, healthcare and telecommunications. They have combined IT budgets in excess of $55 billion annually. Corporate sponsors include HP, IBM, Hitachi Ltd., Siemens-Nixdorf and Sun Microsystems.

Hatch explains that ICS' responsibility is to identify, isolate and document bugs and problems with Motif. Updates, bug-fixes and enhancements to Motif will continue being provided directly by the Open Group.

url:www.motifzone.com

HP KEEPS SAP FLOWING PROFUSELY

The record setting performances for the SAP R/3 application suite just keep coming.

A HP 9000 V2250, using 16 CPUs and 16GB of memory, supported 6,750 sales and distribution benchmark users, with an average dialog response time of 1.95 seconds and a total of over 2 million dialog stops per hour.

The benchmark, conducted by HP's Development Alliance Lab (Cupertino, Calif.), was run with SAP R/3 3.1H on an Oracle 8.0.4 database system.

Not to be left behind, a new NetServer configured with four Intel Xeon 400 MHz CPUs supported 2,700 SAD SD users at an average response time of 1.98 seconds and a total throughput of 811,000 dialog steps per hour.

HP claims this to be one of the best performances ever for SAP R/3 running on an Intel architecture server and NT. The test was run using Oracle 8.0.4, Windows NT 4.0 Server. The server carried 1MB L2 cache for each CPU, 2GB of SDRAM and 580GB of disk space.

The impact of this performance is augmented by HP's introduction of the industry's first suite of mission-critical services designed to insure the highest levels of availability for SAP R/3, Windows NT environments.

The service includes a comprehensive operations checkup of a customer's IT availability readiness.

url:www.hp.com/go/NTsolutions.

STILL MORE ON SAP

HP wants to help its SAP customers consolidate their systems. In fact, it is claiming that two new enhancements to HP-UX may reduce the number of servers required for R/3 installations up to 10:1.

The first capability, called memory windows for HP-UX 11, eliminates the 32-bit memory constraint found in many SAP environments. Optimized specifically for applications like SAP R/3, it offers virtually no limit to the amount of shared memory.

The second feature, HP Process Resource Manager (PRM), can enhance service levels by augmenting the UNIX system scheduler's allocation of system resources.

Memory windows is available for HP-UX 11 support customers as part of the extension software CD-ROM. Process Resource Manager prices range from $2,300 (D-Class) to $11,500 (V-Class).

news threads

OpenView Plugs Exchange

HP OpenView now has a ManageX view into Microsoft Exchange via a new SMART Plug-In.

The Plug-In works with the OpenView ManageX console to pinpoint problems by correlating multiple application values and alerting only when performance thresholds are exceeded for a specific period of time. In the event of a problem, it can produce a real-time graphical monitor spanning 50 time intervals on a single screen to facilitate diagnosis. Pop-up windows with recommendations and possible corrective actions help with recovery.

HP OpenView ManageX SMART Plug-In for Microsoft Exchange sells for $1,195 per managed Exchange Server.

url:www.openview.hp.com

HP, Compaq, IBM Get On The Bus

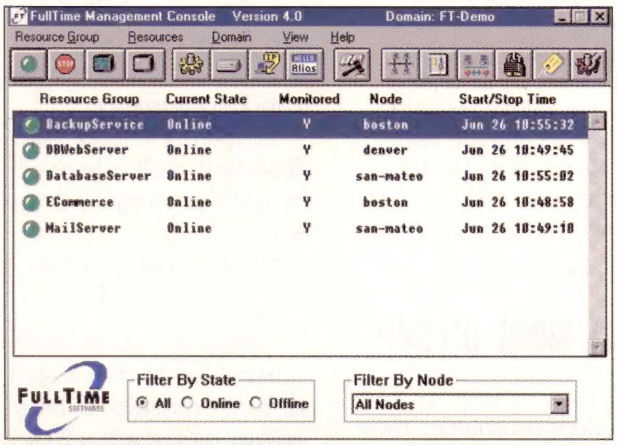
The industry's three largest players are combining to deliver significant improvements in PCI bus technology.

The new, 64-bit PCI-X is an extension to the existing PCI bus, runs at speeds up to 133 MHz and provides burst transfer rates above 1 GB per second. The heightened throughput will provide the necessary I/O bandwidth for industry standard servers running enterprise applications such as Gigabit Ethernet, Fibre Channel, Ultra3 SCSI and Cluster Interconnects. PCI-X also offers backward compatibility with existing systems.

To ensure the availability of PCI-X as an open standard, HP, Compaq and IBM have submitted a proposal to the PCI Special Interest Group to include PCI-X in future PCI standards. Hardware vendors such as 3Com, Adaptec and Mylex have already announced support for the technology.

PCI-X-based products are expected to be available in enterprise-class products in the second half of 1999.

Planning Down Time, Full Time



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As computers and the Internet enable round-the-clock business transactions, it's no longer practical for system administrators to take systems down during "non-business" hours for maintenance. While many vendors offer products to handle unplanned events such as system failures, FullTime Software (San Mateo, Calif.) now has a solution to the problem of planned down-time.

"It turned out that planned downtime events were actually a bigger headache," says Kelly Polanski, director of product management for FullTime. "It costs more because it happened more frequently than unplanned downtime and when systems were taken down, they stayed down longer."

FullTime Enterprise 4.0 manages and adapts a computing infrastructure so that applications and their associated service levels stay available during downtime.

The cornerstone of the solution is FullTime Cluster. When FullTime Cluster is installed on a server, administrators can move applications to any other server or servers in the clustered domain (with the touch of a button) if they need to perform hardware, software or operating system upgrades —and back again when they're done.

FullTime Cluster also responds to load requirements and helps prevent failures by monitoring conditions and shifting resources accordingly before a crash occurs. It can be configured to automatically dedicate additional computing resource capacity to key applications during times of increased activity, such as a certain day of the week or time of day.

"This really optimizes computing capacity," says Polanski. "You don't have to permanently dedicate computing capacity to match peaks in load — expensive capacity that doesn't get used most of the time."

Another component is FullTime Data, which provides data protection by replicating data changes across LAN and WAN distances, Polanski says.

"This means that applications that move around the clustering domain from server to server can use replicated data to ensure that end users don't lose their work," Polanski explains. "Also, FullTime Data can replicate data among remote offices and the corporate head office for reporting purposes."

Jason Grant, an independent consultant evaluated FullTime Enterprise for a major information services provider and was pleased with the results. Grant set up a test cluster using FullTime Cluster, consisting of two nodes with a shared SCSI disk array, using HP NetServer.

"I like the interface and the flexibility that FullTime provides," Grant says. "One of the best features...is that you don't need to have high-end servers in order to set up a fail over solution. Even though most solutions would merit proper hardware, FullTime Cluster is capable of failing over to any NT server providing the failed service can run on that system."

Diana K. McLean
Contributing Author

Running Into Potholes...

On Your Road to NT and UNIX Connectivity?

Running into trouble trying to integrate your UNIX and Windows NT network? TotalNET Advanced Server (TAS) software will smooth the rough road ahead.

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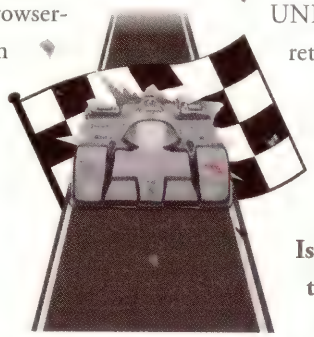

Common File System: Data and applications are stored in a central TAS-based server where NT and UNIX users can easily access the same data.

Transparent to the NT Desktop: The TAS server is seen by NT users as a PC server, so users do not need to know UNIX to access resources on that server. No retraining is involved.

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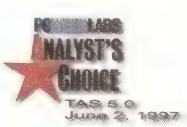

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Managing Documents And Workflow

What Forces are Driving Document Technologies?

INFORMATION NEEDS to flow across the enterprise, not just to a few select areas. As vendors modify their products to support information dissemination, the true challenge will be to create document technologies that support and promote collaboration across disparate systems and groups within and outside the organization.

Table 1
Total Document Technologies Vendor Revenues, 1998-2002 (US $ M)

1998	1999	2000	2001	2002	CAGR
$13,901	$17,754	$22,386	$27,638	$33,669	19.4%

Table 2
Document Management and Workflow Growth, 1998-2002 (US $ M)

	1998	1999	2000	2001	2002
Document	$2,979	$4,057	$5,498	$7,271	$9,560
Workflow	$2,850	$3,775	$4,955	$6,125	$7,231

Priscilla Emery

A recent study prepared for AIIM International (Silver Spring, Md.) by International Data Corporation (IDC; Framingham, Mass.) revealed that total revenue for suppliers of hardware, software, maintenance and services used for automating document information is expected to grow from $13.9 billion in 1998 to more than $33 billion by 2002 (see Table 1). This represents a five-year compound annual growth rate (CAGR) of 19.4 percent.

The market for document technologies is dominated by document management and workflow segments. Document Management is expected to see the strongest growth over the forecast period — it's expected to more than triple from nearly $3 billion in 1998 to over $9.5 billion in 2002 (see Table 2). The use of the Internet or corporate intranet as a document repository is the primary fuel driving the spurt.

Over the past two years, document management has been established as the defining concept for document technologies suppliers and customers. As a result, most of the integration of functional capabilities across these markets is taking place within a document management framework. The workflow market, on the other hand, is expecting significant changes along divergent paths.

FLOWING INTO THE MAINSTREAM

On one hand, it is becoming a messaging and Web-enabled enterprise applications framework that can easily and economically be deployed to everyone in an organization. On the production side, workflow is becoming a core attribute of many packaged applications solutions from vendors like SAP, PeopleSoft, Oracle, Microsoft, Lotus and Netscape.

The mainstreaming of workflow by this class of supplier is both a threat and opportunity to the dedicated workflow provider. The new play-

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ers will expand the market, ease the integration problem for customers and provide incremental OEM revenue opportunities as they push their capabilities beyond just enhancing their other product lines.

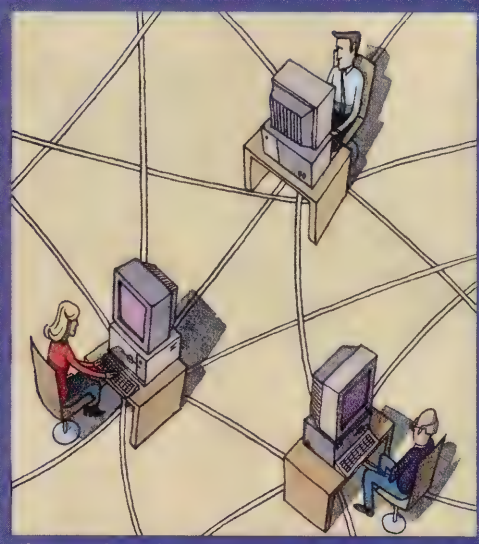
The threat is that all of these players are capable of building their own workflow and in fact, some including Oracle, SAP and PeopleSoft already have. Therefore, this represents a significant challenge if existing players do not aggressively pursue market and development relationships with these vendors.

The Internet, Integration And The Enterprise

Several key trends are expected to fuel the growth of the document technologies market.

Growth of the Internet. Taking advantage of the Internet has been the overwhelming theme for IT providers in the 1990s. The Web has fundamentally changed the document technologies market as the client-side economics of deploying the technologies to thousands of users has dramatically improved. In addition, the Web plays a vital role as a medium for distributing document-based information. As a result, it's become a major catalyst for new customers to gain a competitive advantage through the deployment of enterprise document distribu-

DOCUMENTING DOCUMENT MANAGEMENT



Document management helps users organize data, distribute documents and manage the flow of information among users or across an organization. For example, Minnetonka, Minn.-based Chronimed Inc. develops, markets and distributes pharmaceuticals, medical products and other specialized services for people with long-term conditions such as diabetes, HIV/AIDS and organ transplants.

Chronimed handles billing to insurance companies and coordinates benefits from multiple payers. With revenues exceeding $120 million, Chronimed's accurate and timely insurance billing is an integral part of its business model and one of the company's biggest competitive advantages. A careful assessment of the company's internal procedures and claims handling processes revealed the need for a more efficient document management strategy. Implementing a document management system has reduced time spent processing documents by 70 percent and enabled all of Chronimed's 300 employees to view these intranet-based documents at any time. In addition, Chronimed can now issue invoices to insurance companies at an increased rate, reducing by 30 percent the time it takes Chronimed to be paid by insurance companies.

Working On Workflow

Workflow is the complete or partial automation of a business process during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules.

For example, the U.S. Patent and Trademark Office (PTO) has embraced workflow to address its business process. To date, case processing at the PTO has been mostly a manual process involving large, bulky paper-based files. As of January 1998, the PTO began process-centered workflow in its Patent Appeals and Interference Board (PAIB). PTO's initial workflow application is called the Appeals Case Tracking System (ACTS). ACTS has been running since late January and appeals cases are being added at the rate of 300 to 500 per month. More than 3,300 patent decisions were appealed last year.

Under ACTS, the Appeals Board will be able to add another 700 cases this year, with greater gains in the future as staff become more familiar with the system. Implementing a workflow application allows the Appeals Board to handle a greater number of appeals in less time and provides them with a full suite of reports, cleaner data and a better feel for the workload, allowing them to make better predictions for staffing.

-P.E.

tion environments and a motivating factor for existing customers to upgrade their document technology infrastructures.

Integration between document technology systems. Convergence has been reshaping the document technologies market over the past three years. Increasingly, suppliers are developing integrated product suites that provide any combination of document management, imaging, workflow, retrieval, computer output to laser disk (COLD) and film-based imaging capabilities — to the point that IDC and AIIM believe that integrated systems will become the de facto approach by the turn of the century.

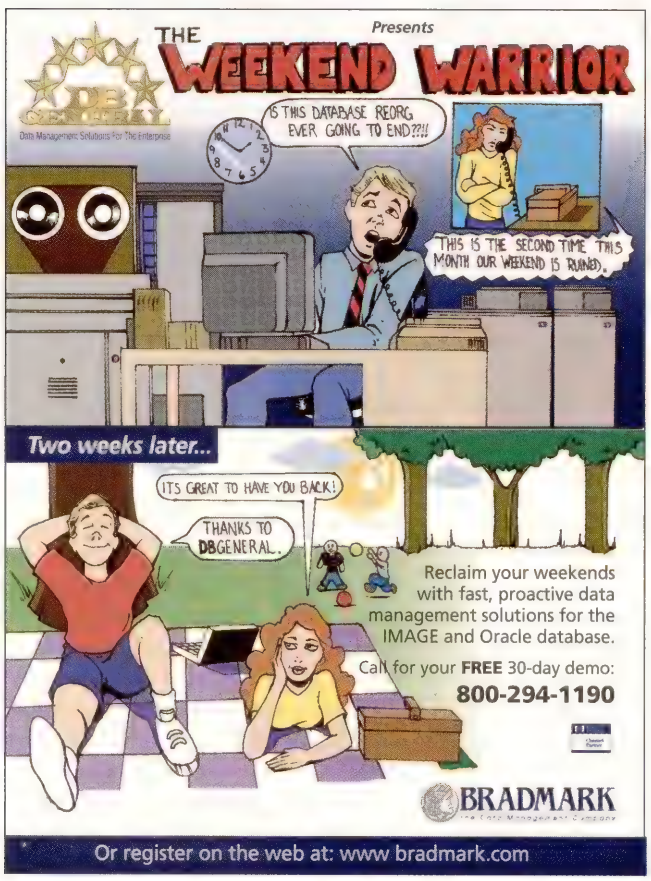
This is a major market force because the suite approach's lower cost of ownership, rapid deployment, integration facilities, easier training, maintenance and support requirements is very attractive to customers.

Enterprise-wide deployment. "Enterprise" is a term that has been used for several years by suppliers of the technologies, however, there is no standard definition of an enterprise system. For the purpose of establishing a research definition, IDC uses a ratio of 75 percent or more total employees using the document technology system to define an enterprise. Document management and workflow both posted strong numbers for account penetration at 18 percent and 13 percent respectively.

Customers have deployed document management enterprise-wide more frequently than workflow. Workflow systems are expanding at a slightly less aggressive rate, however, the growth of enterprise workflow capabilities being delivered on messaging and Web infrastructures will drive strong growth in this area over the next five years.

Document management and workflow may be at the core of document technologies growth, but it's important to note that there are several other segments of the industry providing growth as well. They include document imaging, COLD, full text retrieval and film-based imaging. These are the technologies we acknowledge now. This industry is changing so rapidly that we should all stay tuned for the next round of future document technology.

—Priscilla Emery is senior vice president Information Products & Services for AIIM International. To obtain a copy of the study, "State of the Document Technologies Market, 1996-2002," contact AIIM at 301-587-8202.



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Network Service Modeling

Posing A New Philosophy For Risk Management In The Workgroup Age

USING A SERIES of "what-if" scenarios to determine effects on performance without affecting the production network is an idea whose time has come. Network Service Modeling gives administrators the ability to predict how network service levels will be impacted by the inevitability of change.

HP/MIL 3 integration automatically initializes the model, reducing the level of effort from weeks or days to minutes.

Marc Cohen and Steve Johnson

Network Service Modeling is based on the technology of network simulation, which replicates in software the dynamic behavior of an entire network, including traffic and protocols. Most enterprise networks experience almost constant change brought on by a dynamic user base, technology migration and new bandwidth-hungry applications. And with those changes come uncertainty and the risk that required service levels will be violated. Until recently, many organizations adopted a policy of risk management that accepted at least several hours of network downtime to accommodate change.

Increasingly, the success of corporate business units is linked with the IT organization's ability to deliver continuous, uninterrupted service at guaranteed performance levels. This can be seen in the evolution of service level agreements that financially penalize service providers for not meeting their commitments and by the introduction of policy-based management to control the allocation of bandwidth. The cost of the network going down or service levels being violated for just a few minutes can be significant. For IT organizations, risk management is taking on a new meaning.

Change And Effects

There are two ways to ensure that change will not negatively impact the network. First, significantly over-engineer the network by adopting the fastest technologies and operating at well below capacity. While this policy of risk avoidance was once acceptable, it is now cost prohibitive.

Second, anticipate the impact of change using Network Service Modeling and appropriately evolve

the network to ensure that service level requirements are maintained. This approach allows the IT organization to proactively manage risk and optimize provisioning with confidence.

So, why aren't more organizations using Network Service Modeling? Until now, modeling tools have been poorly integrated with the network management process, too difficult to use effectively and were too costly. Most IT organizations do not have the time to dedicate staff to network planning, but must absorb this function within their other activities.

To overcome those obstacles, HP and MIL 3 have signed an exclusive technology and marketing agreement to integrate MIL 3's OPNET Planner 5.0 with HP OpenView's (HPOV's) Network Node Manager and NetMetrix products.

There are two ways to ensure that change will not negatively impact the network: First, significantly over-engineer the network by adopting the fastest technologies and operating at well below capacity. Second, anticipate the impact of change using Network Service Modeling.

Driving The Baseline

The integration of OPNET Planner and HPOV addresses one of the most challenging aspects of Network Service Modeling — initializing the model to accurately represent the existing network, an essential step before examining "what-if" scenarios.

HP's Network Node Manager provides the topology and device information used by OPNET Planner to automatically create the network model. HP's NetMetrix provides RMON2 traffic data to automatically create a baseline of current network traffic.

With the baseline in place, relocating a node in the model can then result in the modeled traffic being appropriately re-routed. It also becomes easy to scale the NetMetrix traffic to see the impact of growth, as well as "copy and paste" traffic into other areas of the network.

HP and MIL 3 have created a project-based workflow for OPNET Planner to manage project and scenario information. Scenarios can be compared and potential network bottlenecks quickly identified, which facilitates configuration and provisioning decisions. Topology information within OPNET Planner maintains the same structure as in Network Node Manager to provide continuity and a natural flow between the products.

OPNET Planner makes it possible to consider the impact of change:

"What if we add 1000 users to the network?"

"What if we migrate to ATM or Frame Relay?"

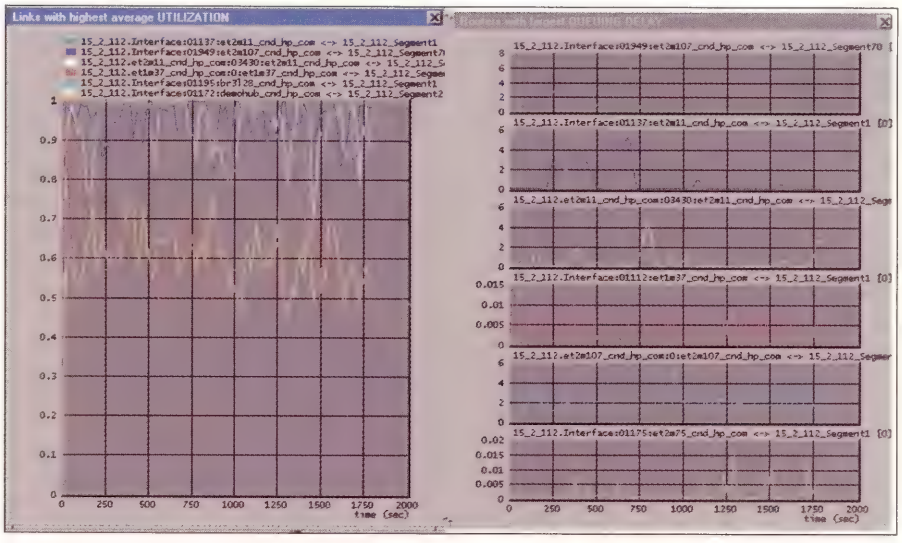
"What if we deploy SAP?"

It's A Confidence Game

How can a user have confidence that Network Service Modeling results are accurate? MIL 3 has pioneered modeling and simulation in the networking R&D community for twelve years. Virtually all network equipment manufacturers use OPNET modeling products in their design process. OPNET protocol models are provided for peer review and examined by thousands of specialists each year. The same core technologies and models developed for this demanding environment are used in OPNET Planner.

MIL 3 and HP's goal is to make Network Service Modeling a natural extension of network management. The future will bring even tighter integration among OPNET Planner, Network Node Manager and NetMetrix, as well as support for data from other HPOV products.

—Marc Cohen is CEO of MIL 3. Steve Johnson is HP's Net Metrix Project Manager.



Identify future network bottlenecks via "What if?" scenarios.

A Harmonic Convergence In Knowledge Management

Integrated Document Management Is A Perfect Solution For The Now Generation

INFORMATION NEEDS to be made easily accessible by knowledge workers throughout the enterprise, not just in a few departments. More than ever, organizations are relying on integrated document management software to provide solutions, increase efficiency and improve the bottom line.

Lee Roberts

Organizations have usually used a collection of diverse products, including document imaging, workflow and document management software, to create an overall document management solution. But many industry experts believe the market is moving away from traditionally disparate enterprise document management applications. The new trend in the market is the implementation of integrated document management (IDM): a collection of solutions including enterprise document management, document imaging, workflow and report management software.

The Gartner Group (Stamford, Conn.) estimates the current installed base of integrated document management software is four million users and is expected to grow to 48 million users by the year 2001. These IDM solutions will enable corporate and government organizations to unleash the power of information by providing access to an organization's documents across the enterprise.

INTEGRATED DOCUMENT MANAGEMENT

IDM is a solution that is transparent to the end user but integral to the business demand for instant access to information. IDM software products can be deployed on Microsoft Windows with Internet Explorer client desktops, which helps to significantly reduce deployment time for document-enabled line-of-business and general access applications. They allow users to access any document from any desktop and put those documents to work using document-centric, graphical workflow processes. With these capabilities, organizations can reduce the cost of ownership while retaining best-of-class attributes for production and general access to documents and workflow processes.

The Internet has proven to be a catalyst for the integrated document management industry. Organizations want information access that cuts across geographies and organizations, data types and platforms, just like on the Web. IT managers, no longer tied

solely to the client-server environment, increasingly seek Web-deployable applications for simplified administration, ease of deployment and reduced costs.

Today, new classes of IDM software can be deployed in thin-client or Web browser environments, providing users, such as remote offices, business partners and vendors with easy access to corporate document libraries. This structure allows them to participate in document-centric workflow processes. Additionally, this IDM foundation can be implemented using the same component software architecture, in a thick-client (client-server) environment.

IDM! How Suite It Is

IDM solutions are composed of suites of component software, providing a single point of access to any document, while offering scaleable, enterprise-enabled capabilities. The back-end or server is transparent and users have a comfortable interface to work with, eliminating many of the costs associated with training on proprietary software. With component-based IDM software, an organization can quickly develop and deploy tailored solutions to enable users to easily query enterprise document libraries to retrieve, view and update documents and create workflow processes in real-time to put the documents to work in workgroups, departments or across the globe.

IDM's Benefits

Founded in 1898, Bechtel Corp. (San Francisco, Calif.) is a global firm specializing in engineering and construction and management projects. Contributing to support operations is the Electronic Disbursement Center in Phoenix, Ariz. The Disbursement Center has responsibility for paying the invoices and expense reports for all domestic offices, involving hundreds of projects and handling upwards of 10,000 payment transactions each month.

In its quest for improving project performance and reducing costs, Bechtel realized that it had to streamline its accounts payable operations. The paper-based, manual operations for its four disbursement offices were not operating at peak efficiency, with expense reports taking up to 10 days to process. The company found that the cost-per-transaction was several times higher than industry benchmarks and as a world-class technology and engineering firm, Bechtel realized there had to be a better way.

The Internet has proven to be a catalyst for the integrated document management industry. Organizations want information access that cuts across geographies and organizations, data types and platforms.

Bechtel's IDM Solution

Bechtel selected an IDM solution that became operational in 1995 to solve these problems and improve productivity in their Accounts Payable department. This client-server solution includes IDM Services software from FileNET, Oracle Payables, a HP 9000 UNIX server and two HP optical disk jukeboxes. This mixed computing environment provides a flexible and scalable solution for organizing, storing and accessing all kinds of documents.

This IDM solution produced impressive results — staff was reduced by 60 percent and costs reduced by 70 percent. "Using IDM, we can offer all our domestic billing offices fast electronic access to invoices as needed to complete our project billing," said Bill Kearney, workflow process manager at Bechtel's Phoenix Transaction Processing Center. "IDM and workflow are the tools that stop the paper flow in the mailroom and have reduced our costs dramatically."

As companies struggle to reduce costs and increase productivity, IDM has emerged as an effective means for achieving these goals. A March 1998 International Data Corp. (IDC; Framingham, Mass.) study estimates that $1.6 billion will be spent on integrated document management in 1998 and spending will reach $5.5 billion by 2001.

As companies expand globally and the Internet plays an increasingly important role in business, the seamless sharing of knowledge will become a business standard. Integrated document management will soon become as commonplace on employees' desktops as word processing is today. And companies presently benefiting from integrated document management are better prepared to serve their customers and be profitable.

—Lee Roberts is President and CEO of FileNET Corp.

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Where, Oh Where Is My Report?

Three management disciplines help companies get control of corporate data

ACCORDING TO ONE Fortune 500 company that recently completed a global implementation of SAP R/3, the most common cry received by its Help Desk staff is, "Where is my report?" When users don't receive the information they need, they cannot perform their jobs effectively, consequently the business is at risk.

Andy Kicklighter

The advent of ERP and other distributed applications has vastly increased the quantity and variety of corporate information that must be distributed and otherwise made available to end-users. It has also made the task significantly more complex. In the "old" days, IT would dump output from the host computer directly to a high-speed printer, then "burst" the reports and have the mailroom deliver them via "sneakernet."

Now, output from multiple applications must be delivered to end-users who may be located anywhere on the network (including mobile), working in a range of operating environments and may require the information in a variety of formats (hard copy, fax, pager, e-mail, Web page, archive directory, etc.). Moreover, end-users frequently require on-demand access to corporate documents. They may also need the ability to distribute their own documents and reports across the enterprise.

To meet the challenge, IT managers are turning to management solutions from third-party vendors. The functionality provided by these solutions typically falls into one or more of three distinct but interrelated disciplines: Print Management, Document/Image Management and Output Management. These terms are used inconsistently (and sometimes incorrectly) by vendors, analysts and end-users alike, resulting in widespread confusion. By understanding the differences, managers can focus on the solution best suited to their specific requirements.

Print Management. Print Management focuses on the management of individual printing devices. Functionality may include configuration of the individual print device, basic access control and management of the print spool associated with the individual device (the ability to monitor or delete queued print jobs). It may also include viewing and optimization of documents prior to printing (correcting color, for example) and conversion between print formats (i.e., from TIFF to Postscript). Typically, the manufacturer of the printing hardware provides these utilities. Print Management functionality can also be found in some enterprise systems management (ESM) products, which collect information on print devices from the operating system and via SNMP.

Document/Image Management. Document/Image Management focuses on online organization and management of, and access to, corporate information stored as "images" (i.e. an electronic picture of a source document, rather than merely the data it contains). It applies the "pull" model of information distribution, wherein the information is stored online in a repository and users access the documents they need. Functionality may include:

Capture: Documents stored as images in the repository must first be "captured," either by scanning (in the case of paper documents) or direct capture of the output.

Indexing: A variety of methods may be employed for categorizing and organizing stored documents.

Storage: Storage must be managed for maximum efficiency of retrieval and cost-efficiency; unwanted documents must be purged according to rules and data must be backed up.

Retrieval: Advanced query and retrieval engines enable users to quickly access stored documents. "Publish-and-Subscribe" enables users to automatically receive documents of interest when they are posted to the repository.

Access Control: Ensures that users

Document Management
Output Management
Printer Management
•Pull model for information access
•Organize, manage and access information
•Push model of information access
•Control, manage, monitor information distribution throughout an Enterprise
•Device management and access for printers
Distribution Automation
•Complex routing schemes
Information Retrieval
•FAX
•E-mail
•Print
•Web
•Archive
Print Distribution Only
Distribution
•Anywhere to anywhere
•Device independence
•Viewing for control and preview
•Guaranteed delivery
•Output archiving
•Tracking
•Enterprise security and access control
•Report automation and filtering
•Report mangement
Archiving for retrieval on request
Customized Display of information
Secure Database Access Capture
Error/Event Logging only
Device by device access control
Enterprise Wide Notifications
•Completions
•Application specific notifications
•Errors
•Status
Local Error/ Event logging
Accounting and Device Usage Information
Less Detailed
Extended Spooling Control
Basic spooling control, usually through the OS
Device setup, discovery and configuration
Printers only
Device feature selection
Yes

gain access to only the information for which they are authorized.

Display/Print: Provides end-user facilities for viewing data on their screens, or sending documents to local or remote printers. May also include functionality for converting documents to appropriate print formats.

Output Management. Output Management focuses on information distribution and formatting, centralized distribution management, centralized device control and management across the enterprise. It employs the "push" method of document distribution, delivering output from an application to a pre-established list of recipients according to rules defined by the user or administrator.

Features of an output manager may include:

Tracking/Notification: Provides IT managers (or authorized users) the ability to track an output job from the time it is generated by an application or end-user until its final delivery. Administrators can monitor the status of spooled print/output jobs and receive notification of changes in device status, errors, or completion of the output job.

Fault-Tolerance: Enables automated recovery from output job failures — for example, re-routing a print job to a secondary printer and notifying the end-user of its location.

Security: Enforces corporate security policy, such as authorization of users to data and to output devices and encryption of data prior to transmission via the Web.

Rules-Based Routing: Enables routing of output to multiple users across an enterprise according to rules defined by the administrator. Output recipients may also provide rules for delivery — for example, to a home office on weekends and a local printer during the week.

Prioritization: Enables IT to assign priorities to output jobs, or set rules for directing output to print devices based on size of job, criticality, or available print resources. May also enable administrators to reconfigure jobs within a queue.

Collection of Metrics: Enables IT to track resource usage for accounting and to identify patterns, target trouble areas and plan for future needs.

Output Resource Availability: Enables end-users to send output to any output devices on the network (printers, fax machines, pagers, Web pages, etc.) for which they have authorization.

Moreover, end-users frequently require on-demand access to corporate documents. They may also need the ability to distribute their own documents and reports across the enterprise.

IDENTIFYING THE BEST SOLUTION

Document/Image management systems are most appropriate where users require on-demand access to large amounts of corporate data, especially historical data. For example, clerks at an insurance company may need to pull up claims forms and other documentation. Customer service organizations use document management to establish an indexed, searchable "knowledge base" of past problems and solutions. Document/Image management may also be appropriate for organizations that must deliver graphical or customized text documents such as product marketing materials, spec sheets, diagrams, or owners manuals across the network to end-users.

Output Management solutions, on the other hand, are appropriate whenever IT must ensure secure, reliable delivery of business-critical information across the network. In ERP environments supporting Just-In-Time manufacturing, the delivery of invoices must occur in a timely fashion. IT requires notification of the status of output jobs, printers and other output devices and even recipients (are they on the road or in the office?).

Output management is also appropriate for organizations that wish to gain central control of print resources for access control and ease of administration. For example, in order to enforce corporate policy, IT may wish to allow Finance output to go only to Finance department personnel.

Currently, a wide range of solutions address the print/document/output management space. Many of them offer subsets of functionality from the different management categories (and certain vendors claim to offer all of it). Output management solutions, for example, frequently include print management functionality such as the ability to remotely configure print devices. And a group of tools called "Report Managers" provide a narrow subset of output and document management functionality, storing reports (as data files, not document images) generated online by ERP apps and enabling users to access the reports or to request sub-sets of the report, either for viewing online or output to a printer.

Managers should perform a thorough evaluation of output workflow in their organizations, in order to determine how employees currently access, use and distribute documents to do their jobs. By understanding how data flows through the organization, IT managers can get beyond the bells and whistles and focus on the nuts and bolts.

—Andy Kicklighter is Product Manager, Output Management Solutions for Tivoli Systems, Inc. (Austin, Texas).

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Messaging And Groupware
A Collaboration

By Ken Deats

Discussions about groupware tend to start out with more questions than answers. Is it e-mail? Document management? Messaging? Calendar sharing? While most users have different ideas on the specifics, almost all agree on the collaborative nature of the groupware process. Dataquest, the market research firm, breaks down the collaborative computing market into five categories: messaging systems, e-mail/user agents, electronic documents/workflow, group scheduling/workflow and finally, groupware.

The treatment of messaging, e-mail and groupware as distinctly separate entities within the collaborative process is the key point. It's a subtlety often lost on many IT managers. While the list of companies usually associated with groupware products reads like a who's who of networking technology, their products can be defined only in the broadest term of what groupware really is. The Dataquest report defines messaging systems as products that, "provide the software platform providing the infrastructure or backbone required for the development, deployment and management of collaborative applications," and e-mail/user agents as products, "focused on the sending, receiving and reading of electronic mail messages."

Finally, groupware encompasses, "products that combine a number of collaborative functions — that is, message transfer agents, directory, gateways, e-mail clients, collaborative tasks and scheduling, among others." HP's OpenMail, Lotus' Domino, Microsoft's Exchange and Novell's GroupWise are, in the strictest sense, messaging systems. Specific application products such as calendaring, that sit on top of, and rely on, the foundation laid down by the messaging engine fall into the groupware folder (See Figure 1.)

MELDING MINDSHARE

"Some people are using the word collaboration," says Richi Jennings, HP's OpenMail technical product manager. "In terms of mind share, Lotus is seen as defining what the groupware market is. And I think rightly so with the Notes and Domino products."

"A lot of people view groupware as the classic definition of people solving problems within groups and communities of interest," says Arthur Fontaine, Notes and Domino marketing manager for Lotus. "While that still applies, the market in general now views what was classically viewed as groupware as more of an enterprise infrastructure product and category. You're seeing that a lot — the way the products got used changed the definition and consequently changed the requirements of the products."

OpenMail, designed with the X.400 protocol, was originally aimed at large, 5,000 or larger user installations and now serves almost 8 million seats. But, Jennings adds, as the X.400 and Internet standards fought each other in the messaging arena, HP didn't want to wait for a victor to emerge. "So we built a system that can cope with both of them and added a few bits of our own which we think are important."

As the only hardware vendor in the group, Jennings emphasizes that HP does not see OpenMail as a tool to sell more servers. "We don't care if you run OpenMail on HP-

UX or AIX or Solaris. Contrary to what may be the popular belief, he says that HP "is not trying to leverage hardware sales. We're strictly a software business." OpenMail is a separate division within HP's Software and Services Group (SSG).

Jennings also touts the client side of OpenMail as well, listing cc:Mail, MS Mail, MS Exchange, MS Outlook as well as Netscape Messenger as client software providing access to OpenMail post offices. He says that a recent HP survey found that a majority of installed OpenMail clients are using cc:Mail clients. "cc:Mail is getting a bit creaky these days. Most of them are moving to Outlook. That's probably the client that's getting the most interest from our customers these days."

Other OpenMail enhancements include updates to Outlook client support that will provide "extremely rich Outlook functionality when connected to OpenMail ... very similar to functionality you get when connected to an Exchange server." Included for Outlook clients is a fully automatic meeting scheduler for use over a WAN. "That's not something that Exchange does or any of our other competitors do."

He adds that HP is working with the Internet Messaging Consortium to help customers put barriers in place to prevent the delivery of spam. That feature should be in the next release, due by the end of 1998.

Seibe Environmental Controls (Rockford, Ill.) migrated from a Unisys A Series mainframe in order to incorporate open systems into their environment. They chose a HP 9000 T/500 and OpenMail as their messaging platform. "Our client e-mail is divided 50 percent MS Outlook and 50 percent OpenMail," says Louis True, director of IS at Seibe. True plans to migrate Seibe's 1,000 clients to Outlook "to incorporate a server-based calendaring/scheduling system with OpenMail."

He adds that the move to OpenMail (messaging was not used by Seibe with the Unisys) has realized thousands of dollars in savings in copier paper, mailing labels, postage, phone charges and productivity. "No more mailing diskettes with sensitive spreadsheets, memos, or faxing," he says. In a common lament, he adds, "It took a while to get upper management on board, but now our executive staff can't function without it."

The treatment of messaging, e-mail and groupware as distinctly separate entities within the collaborative process is the key point. It's a subtlety often lost on many IT managers.

Finally, the recently released OpenMail Product Roadmap touts upcoming features such as Hierarchical Storage Management (HSM), which allows for the automatic archiving of older, less frequently accessed messages and Parallel Queuing Architecture (PQA), which "makes better use of machines with a large number of processors."

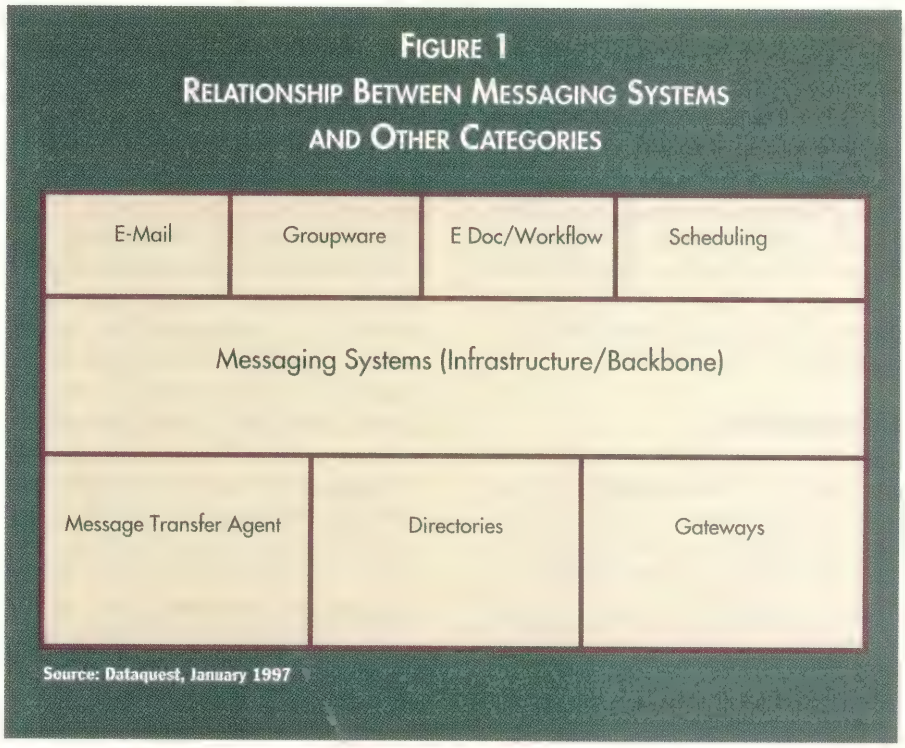
WHOA WHOA NOTES/DOMINO

At its inception, Lotus Notes entered the world as a small workgroup messaging application server in the late 80's. As user's fascination with the Internet surged through the 90's, Notes customers expressed concern about the long-term health of a product built on a closed environment.

But Lotus developers discovered that it was a fairly simple process to add Internet connectivity. As they added protocols such as MAPI, HTTP and POP3, over time the enhancements became so pronounced that it made sense to re-brand the server.

"We never changed the server product or what you got in the shrink-wrapped box, but we did change the name of it from Notes server to Domino server," says Fontaine. "Call it Notes with Internet extensions." As developers listened to the Internet mantra of Notes users, they found that forward thinking cus-

FIGURE 1
RELATIONSHIP BETWEEN MESSAGING SYSTEMS AND OTHER CATEGORIES



Source: Dataquest, January 1997

GETTING TO KNOW KNOWLEDGE MANAGEMENT

"Many of our customers take what we've offered and extend it to ways you might not expect when you design the product," says Lotus' Fontaine. This, he adds, is leading to more advanced uses of the technology and spurring knowledge management as a new growth area. Knowledge management is a new name for a relatively old concept in which an enterprise comprehensively gathers, organizes, shares and analyzes its knowledge base.

Few enterprises actually have a knowledge management function in operation, choosing to focus instead on trying to bring existing processes together. Some aspects such as data mining and push technologies are new; others, such as data entry and OCR are very familiar. This according to Fontaine, will put more "focus on supporting more users in larger environments. [Products] must move beyond a specific niche, or problem solving tool to an infrastructure which goes beyond e-mail to making these platforms the window to a ton of new and disparate information and data sources."

Though not using the phrase "knowledge management," HP's Jennings sees some of those functions as being important for OpenMail users. "Sharing information in not just a pull model, like e-mail, but also in a push model like a public folder or bulletin board is becoming important to messaging clients. That's functionality that OpenMail has had for many a year."

— K.D.

tomers were taking Notes to places they never expected. For example, Fontaine says that Notes users, working within the development environment of Notes and workflow capabilities of Domino, opened up the client as a window into relational databases, transactional systems, the Web and external data sources to "extend their internal business processes outside of the firewall."

EXCHANGE RATE

Only two years old, Exchange can be considered the hard-charging prodigy in a maturing market. Their installed base of 16 million seats has grown by over six million in 1998's first two quarters and has pushed it past GroupWise's foundation of 13 million seats to trail only Domino's 25 million. "Exchange is a messaging and collaboration server," says Dave Malcolm, Microsoft's product manager for Exchange Server, "that essentially allows you to work more efficiently and effectively with your team, with your company, with your partners or with your customers."

Malcolm says that Microsoft isolated three areas when talking to their customers about what was important in designing Exchange: the system must be built for the enterprise; it must be interoperable with the Internet and their existing systems; it must be a foundation for developing collaborative solutions. He adds that earlier messaging systems like cc:Mail and MS Mail weren't built to scale across the enterprise, but were designed for departmental or workgroup mail solutions. "Exchange was architected from the ground up to solve the needs of the enterprise."

"Our first goal was to provide them with a solid messaging infrastructure. Once that was in place, we focused energies on building up the application development capabilities of Exchange."

WISING UP WITH NOVELL

Novell's GroupWise was a natural offshoot of Novell's popular Netware NOS. It was spawned in 1986 as an e-mail platform with calendaring, scheduling and task management as separate applications. Initial attempts to support their messaging post office under all UNIX flavors were eventually reduced to HP-UX, AIX and Solaris along with NetWare and Windows NT. A full text index version of document management was integrated in release 5.

"Our definition [of groupware] is tools that people use to communicate with each other and share with each other that we determine now is closer to collaboration," says Novell's Bill Mangum, GroupWise product manager. "Working on things together in an office environment with a LAN or WAN or over the Internet. Lotus has taken an additional spin to that with knowledge management."

GroupWise users can publish their documents from the document management system by marking them for Internet access. He adds that the dynamic HTML is not an add-on. "Adding that as an integral part was very strategic for us and continues to be so. [It] sets us apart in many ways from our competitors — the fact that it's included right in the box — is integral to the product."

Novell's developers, like Lotus' developers, also listened to their users chorus of Internet interoperability and Mangum ticks off a list of other enhancements to GroupWise's latest release, version 5.5.

First, is Internet addressing. GroupWise does the DNS lookup, allowing for business-to-business or GroupWise-to-GroupWise communication without having to find the other system. It also transports information in rich format for calendar and task scheduling. It can perform busy search, do message status tracking across the Internet and it allows for retraction of a sent message.

OpenMail's incorporation of the X.400 standard naturally places it at the top of the "users supported" category. "OpenMail runs very nicely on midrange UNIX boxes. We've got people running 2,000 or 5,000 users on one of those without breaking a sweat," says HP's Jennings. He adds that the technology is there to allow OpenMail to scale to 16 or 32 processor machines.

True plans to migrate Seibe's 1,000 clients to Outlook to incorporate a server-based calendaring/scheduling system with OpenMail.

While UNIX OS servers have always provided greater scalability and reliability, Windows NT running on Intel platforms is closing the gap, at least in marketing hype (see sidebar). Lotus' Domino supports the same UNIX platforms as well as NT, but goes further with AS/400 (native 64-bit) and System 390 versions, which lets those shops connect to back-end systems at channel speed. "We're seeing a lot of people either staging mainframe or using excess mainframe capacity to extend Domino services to users," says Fontaine but he adds, "We install a ton of it on HP-UX."

GroupWise, along with the obvious support of Netware servers, "also works very well with NT. But, you have to have a Netware server for administration purposes," says Mangum. "But, your post offices and domains can exist on the HP 9000 or the IBM RS/6000 or with Sun's Solaris."

Not surprisingly, Microsoft pushes the improved scalability of Windows NT as a plus for enterprise messaging/groupware infrastructures.

"When you start to ask the scalability and reliability questions, you realize that there are hundreds, if not thousands of companies around the world who have proven that Exchange on NT is a scalable if not the most scalable and most reliable messaging system available," says Microsoft's Malcolm. He lists customers like Lockheed with over 95,000 users, the U.S. Airforce with 285,000 users and the U.S. Army with 315,000 as evidence.

Microsoft has lab-benchmarked Exchange at 10,000 users on a single, 4-way Compaq ProLiant, 11,000 on a NetServer and 17,000 to 18,000 on an Intel Xeon-based server. And, with support for NT Clustering Services, they are approaching the "five 9s" threshold of high-availability. "We're not there yet, but we are reaching numbers that are keeping our customers happy."

The aforementioned Dataquest study actually defines messaging systems as products that, "provide the software platform providing the infrastructure or backbone required for the development, deployment and management of collaborative applications," and e-mail/user agents as products, "focused on the sending, receiving and reading of electronic mail messages." Finally, groupware encompasses, "products that combine a number of collaborative functions — that is, message transfer agents, directory, gateways, e-mail clients, collaborative tasks and scheduling, among others."

Because the messaging service is the foundation on which the groupware application rests, the application library available for that platform then plays a key role in any decision. Lotus, with the most market experience in the messaging application field

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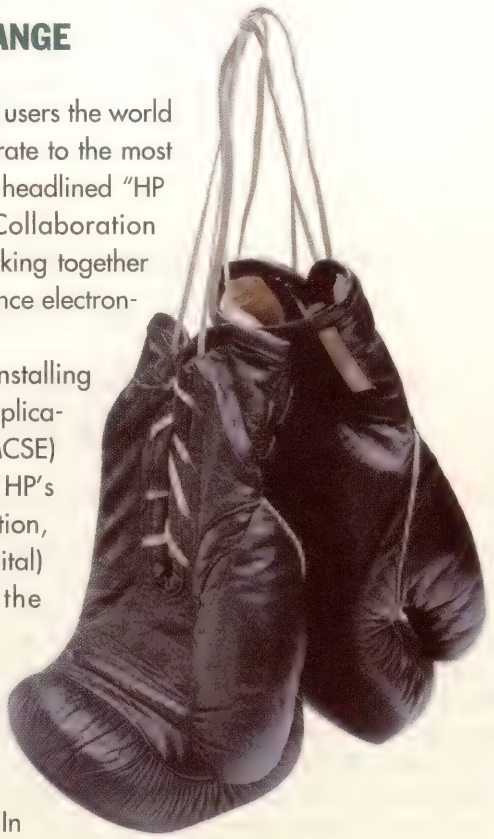

What started as a battle of titans over the hearts and minds of e-mail users the world over may be progressing into a footrace to see who can install or migrate to the most Microsoft Exchange seats. A declaration from HP dated May 13,1998 headlined "HP And Microsoft Announce Worldwide Exchange Messaging and Collaboration Solution for Enterprise Customers," details how the two firms are "working together on end-to-end solutions based on Microsoft Exchange designed to enhance electronic messaging and collaboration in large corporations."

The upshot of the news is that HP is teaming with Microsoft on installing Exchange on top of HP NetServers optimized for Exchange-based applications. A goal of adding 1,000 Microsoft Certified Systems Engineers (MCSE) and 250 pre-sales technical consultants to its staff was announced. HP's Exchange-focused services include project planning, design, installation, implementation and support. Later that same day, Compaq (nee Digital) returned fire in a press release entitled "Digital Response to the Microsoft/Hewlett Packard Announcement to promote MS Exchange."

It starts by asserting, "Today's announcement from Hewlett Packard only reinforces what Digital Equipment Corporation has been doing for the past two years: implementing and integrating Microsoft Exchange in businesses around the world." It goes on to champion Digital's "experience and expertise in integrating Microsoft Exchange." In support, it lists some telling statistics: 800 mail and messaging specialists and nearly 2,000 MCSEs.

Then, on June 3, in a direct frontal assault, Compaq formally announced a program aimed specifically at migrating HP OpenMail users to Exchange (see August HP News & Views). Jacqueline Kahle, Compaq's vice president of messaging and collaboration, in a description that sounded vaguely familiar to HP, said the program is "essentially a service offering," and that it would consist of five steps: planning, design, architecture, integration and maintenance.

With HP and Compaq/Digital going mano-a-mano over Exchange, several obvious questions need to be answered. Is Microsoft Exchange, in fact, the de-facto industry standard? What's to become of OpenMail? "HP is not trying to convert — kicking and screaming — happy OpenMail users to Exchange," says HP's Jennings. "In many different ways HP operates as lots of separate companies, each with their own agenda that sometimes can appear to compete with each other." Jennings looks back to when HP announced it was going into consulting with Lotus Notes, "and some people said, 'Does this mean that OpenMail's dead?' Well no it doesn't. It just means exactly what it says — HP is doing work around Lotus Notes."

"If the customer is a dyed-in-the-wool UNIX customer we would be foolish to sell them Exchange. We're not going to ram a solution down their throat." The result, he adds, is that "this just gives the HP consulting folks another product to sell. It does not mean that HP is going to stop selling OpenMail. We've got a lot of happy users and we're very pleased with the way we're selling OpenMail now."

Jennings says that HP is aware the "ex-Digital folks" are talking to the OpenMail installed base about migrating. But, referring to the Digital announcement he adds, "How can I put this charitably? There are a number of places where they clearly got the OpenMail business wrong." The Digital offer refers to migrating "small- to medium-sized OpenMail users to Microsoft Exchange on Digital hardware platforms."

"That's really not the OpenMail market — there really aren't an awful lot of those [shops with less than 1,000 users]," explains Jennings. "They're attempting to capitalize on any churn in any marketplace. It's not something we're particularly concerned about."

—K.D.

claims "17,000 business partners using Domino ... to solve business problems, automate processes and build workflow applications that add a lot of value to messaging platform. At that point e-mail almost comes free for these customers," says Lotus' Fontaine.

He adds that Lotus partners are adapting an extranet model where the Domino server acts as the middle tier in a three-tier system. "They're grabbing information from back end data sources like RDBMs and transaction systems, adding value to them in the Domino layer, things like filtering and aggregating and massaging data and extending them out to any number of clients from Web browsers to Notes clients."

Microsoft's Malcolm, while admitting to the breadth of third-party collaborative applications for Domino, adds "the gap between Notes and Exchange in terms of collaborative capabilities has decreased significantly to where there are only a few simple differences." In their competitive analysis, Microsoft is finding most Notes applications can be built on top of an Exchange infrastructure. "The 5 or 10 percent that can't, typically would be better suited for a relational database."

Because the messaging service is the foundation on which the groupware application rests, the application library available for that platform then plays a key role in any decision.

Novell lists, among others, add-on products in workflow, imaging, Web publishing and mobile computing in their family of GroupWise product categories. HP, meanwhile, couples with calendaring, document management, gateway, fax/telex, network management and security applications for OpenMail.

At one time, e-mail was just e-mail and applications were just stand-alone software products designed for a specific task. The OS platforms they resided on was easily determined by counting users and considering the legacy environement.

Messaging systems and sophisticated groupware products have blurred the distinctions — where does one product end and the platform begin? And, as Exchange grows into an enterprise engine, the choice there is more difficult to make. ◆

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Middle-Market Opportunities

While looking through news articles or press releases on any given day you are bound to find more articles than you can count about small business initiatives and small-to-medium business (SMB) programs. In the past year, vendors and wholesale distributors have placed SMBs at the forefront of their sales and marketing strategies and the press has supported this move. The rationale behind this shift is quite simple: the SMB market is seen as a vast, under-penetrated market for which the technology industry has, at last, compelling business propositions and solutions.

These strategies raise a serious question, "Should vendors distinguish between small businesses and medium business when building product and marketing strategies? Does it matter?" MSI believes that the answer is unequivocally "yes!" and that by not doing so vendors are creating strategies that are both overly simplistic and inaccurate.

We believe that several key factors must be considered when assessing opportunities and building strategies for the SMB market. These factors include:

Level of IT spending
Technology Environment and Drivers
Decision and Purchase Processes

As the following discussion will reveal, small and medium businesses (medium businesses are also referred to as the "middle market") vary widely in each of these areas, thus requiring differentiated strategies.

LEVEL OF IT SPENDING

Can customers afford to buy the technology?

Understanding IT spending levels within a given market is important when building sales and marketing strategies, for two key reasons.

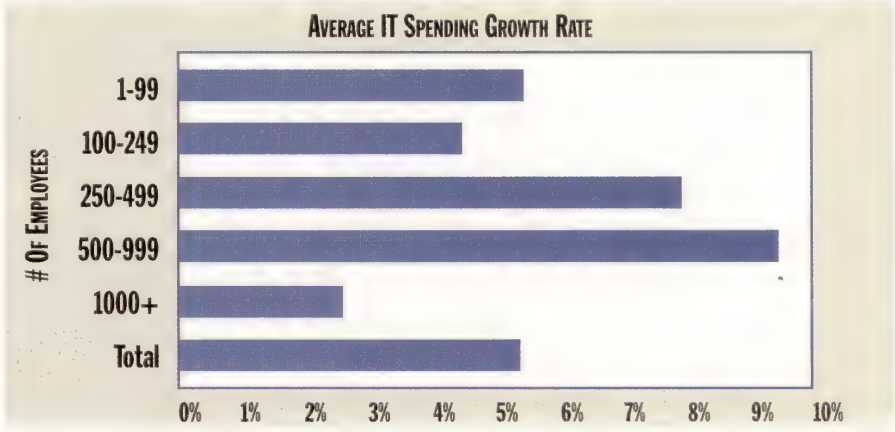
First it provides vendors with an idea of what technologies a company can afford to buy. IT budgets, on average, are quite different between small and medium businesses. Within the small-buinsess segment, 75 percent of the companies have fewer than 20 employees.

As a result, the average IT budget for a small business in the U.S. is only about $21,000. In comparison, medium business had an average IT budget of about $935,000 in 1997. With 100-1,000 employees in medium businesses, these differences are significant in both absolute as well as relative terms; medium businesses are making greater investments in technology. The small business segment is predominantly a PC, low-end server and accessories opportunity for hardware and a shrink wrapped or bundled application opportunity for software.

ITs IMPORTANCE

Second, it reveals the relative importance and priority of technology spending within the segment. The basic premise is that organizations that 1) place a higher priority on integrating technology into their businesses and/or, 2) have greater financial means to buy technology will increase their IT spending at a faster rate. As the chart reveals, medium business on average, increased their IT spending at a faster rate than did smaller businesses. It's important to emphasize that many small businesses do place equal value on technology investments, they simply do not have the resources to increase IT spending at the same rate as larger businesses.

Excerpted from "Recognizing The Middle Market Opportunity" (February 13, 1998). Reprinted with the permission of MSI Consulting Group (Seattle, Wash.).



Source: 1997 IDC Business Environments and Budget Decisions

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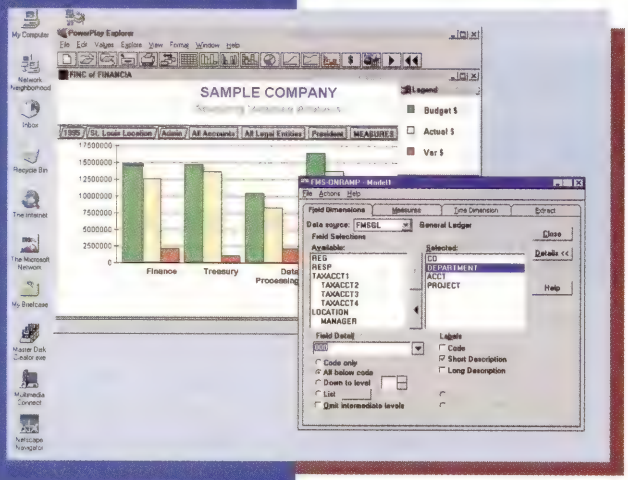

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Put The Squeeze On Web Searches

Sometimes it seems like we spend half our lives searching. Be it for money, the car keys, or the meaning of life, there is always gratification in finding what you are looking for. Think about that some more, and you realize that it is not always good to find more than you are seeking. Finding keys to a car you sold long ago is not very helpful and neither is searching the Web for **the meaning of life** and finding more than 10 million pages, all with different answers.

It would be wonderful if this month's column found the meaning of life, but it doesn't. Instead, I discuss one of my pet peeves — watching people search the Web ineffectively. So often in classes I notice people doing a search and becoming frustrated by the sheer volume of responses. The problem is not the amount of data available (more is better), but in the search methods used.

What really amazes me is that these people can spend hours fixing a program, researching an engineering problem, or solving a computer problem. I guess that performing an accurate Web search is not that important, but it sure can save time if you get a short list of relevant items compared to a huge list that can knot your stomach.

TAPE @ ALTAVISTA

Let's start with an example of an ineffective search. Suppose we're looking for tape cartridges for our backup system that uses the TR4 format. If we entered tr4 tape cartridges into a search engine like www.altavista.digital.com we get over 240,000 matches. Because the search engines put the "best" matches first, chances are that what we were looking for is near the top, but still...

If we have a little bit of Web savvy, we might realize that we did not want **tape** or **cartridges**, but instead wanted **tape cartridges** as a phrase. To be more specific, tell the search engine to treat the two words as one by making a phrase out of it. This is done with quotes. Lets try a search for **tr4 "tape cartridges."**

HIT ME WITH YOUR BEST

This returns over 11,300 "hits" in the database. Still daunting, and still lots of things we did not want in there. If you spend a little time in the help pages on the search Web sites, you'll find some meta-characters that most search engines accept. One of the most commonly used is **+**. This means to require the following word or phrase. Knowing that, we can trim the search result down to a smaller and more relevant 4,100 or so with the pattern: tr4 +"tape cartridges."

This seems pretty good, but, it actually did not do what we wanted. To prove it, look at what these two searches returned. The phrase **"tape cartridges"** brings back over 4,100 while **tr4** retrieves almost 7,300.

What the original phrase really meant was to return pages that required "tape cartridges" and I don't care about "tr4" showing up. What I really wanted was pages that had info about tape cartridges of tr4 type. Thus, I really meant to require both.

BACKING UP YOUR SPORTS CAR

The pattern **+tr4 +"tape cartridges"** returned less than 50 hits and all of them contained both phrases. I can be pretty sure that all pages written by Triumph TR4 automobile buffs were removed. Keep in mind that I also might have lost pages that described tr4 tapes, but didn't use the phrase "tape cartridges." Sometimes you do not want to get overly specific.

The two more commonly used Web search engines (**altavista.digital.com** and **yahoo.com**) provide similar search engine directives. Details are available from links on the search pages, but here is my take.

The first thing to realize is that there is a different syntax required from the "main" search page URLs than from the "advanced" or "search options" pages that are links available near the search input boxes. This is rather annoying, but then, so is the whole current Web atmosphere. The list below describes only the syntax used in the main search pages.

The primary characters recognized are:

" used to combine words into phrases,
+ require the following phrase in any match,
- omit any page that contains the following phrase,
* match partial words,
section: limits matches to sections of an HTML document.

Because we have already described the first two in the list, we'll start with the - symbol. It means that any page

containing this word should not be included. If we continue with the example started above, we could search for **tr4 -triumph** and get roughly 6,430 hits, compared to the almost 7,300 for **tr4** alone. I guess there aren't that many British sports car fans.

The * character is used much as it is in matching filenames from a UNIX shell. It means unlimited text can follow. My first attempt to use this found that it doesn't match with less than three characters, which prevents too many matches. Here was my attempt: **tr***. The goal was to find pages about the Triumph TR3 and TR4 cars. It returned zero patches.

I tried **tr3** and that returned 11 thousand or so. My next attempt was to be more specific, but I ended up getting lucky. When I tried **+tr* +triumph** I got the following error:

Sorry, wildcard (*) must be at least three characters from start of word: tr*

Interesting that there was no error from the original **tr*** search, but heck, that type of thing is what keeps a computer educator in business. A better example of using the * character might be if I were a fly fisherman and wanted pages about how to tie a fly that matches a particularly flavorful insect. The search pattern **baetis** returned almost 900 matches, but **baetis*** returned over 2,260, since there are several suffixes to the name baetis. Interestingly, you cannot use the * to match the beginning of a word, only the end. The pattern ***fred** returned nothing, while **fred*** returns over five million.

The final characters mentioned above vary between search engines, but serve the same purpose. You can look for a match in specified sections of an HTML document. This means that you have some familiarity with HTML for many of them, but others just plain make sense.

There are many sections you can search in. For example, the following all refer to sections in the altavista site: **anchor: link: text: title: url:** and there are several more. Yahoo's engine lets you abbreviate sections to just one character, for example title to just **t:**. Actually, Yahoo only allows two sections, URL (**u:**) and title.

If we were sick of work and wanted to go flyfishing in the Bahamas, we might search altavista with **+flyfishing +bahamas** and get almost 950 hits. By searching for **+title:Flyfishing +title:Bahamas** there are only three, all definitely with information that I need, and, right now, that's exactly what I want.

—Fred was last seen searching for title: +the +meaning +of +life in the +Bahamas.

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NT 5.0 Directories In Action

With the expected 1999 release of Windows NT 5.0, it's time to start discussing new features

and suggesting ways to take advantage of them.

NT 5.0's Active Directory attempts to integrate all directory services such as e-mail address books, Internet domain names and operating system security databases into a single unified system. It reduces the time spent maintaining the various directories on your network and provides a set of tools to communicate with other directories.

At its heart is the Domain Name Service (DNS) - the Internet's primary directory service, which eases communication between computers by turning url's like www.hppro.com into the appropriate TCP/IP address. A scalable directory service, it's small enough to manage a few computers efficiently, but can *and does* support the entire Internet namespace.

SCALING THE BRANCHES

The key to the scalability is a hierarchical tree structure that distributes the directory service between multiple servers, each responsible for a particular portion of the namespace. The DNS server responsible for hppro.com doesn't have to store every name and address on the Internet, only the addresses of the computers in the hppro.com domain and the location of the DNS servers that know about everything else.

Contrast the DNS model with the domain model currently used by Windows NT: NT domains are directories that primarily manage user security. Each domain features a Primary Domain Controller (PDC) that saves security information — data that includes account names, passwords and group memberships and a list of the member computers in the Security Accounts Manager (SAM), an encrypted flat file. Having all this information in a single location eases management but also means a single point of failure and a potential performance bottleneck.

BACKUP STACKUP

Backup Domain Controllers (BDCs) alleviate some of these problems by storing backup copies of the SAM. A computer can be validated by any BDC, but the BDC can't perform all PDC functions and doesn't completely eliminate the single point of failure. For instance, if the PDC is down, you may not be able to change a user's group memberships. And BDCs do not automatically become PDCs, it must be manually promoted to take over. This prevents the quandary that might occur if multiple BDCs on a WAN are able to promote themselves if the WAN fails, then suddenly appear as multiple PDCs when it recovers.

NT domains are generally limited to 26,000 users and 250 groups. That means multiple domains for a single large organization and establishing trust relationships. Using a trust relationship, a trusting domain allows trusted domains access to its resources.

Trust relationships can become complicated very quickly, requiring a lot of maintenance. Four domains trusting each other means establishing 12 trust relationships. With Active Directory, PDCs, BDCs and trust relationships go away — there are only domain controllers.

DIRECTORY SERVICE, PLEASE

To make an NT Server a domain controller, you need only install and start the Directory Service. Every domain controller can update all the directory data, eliminating the problems of down PDCs. Domain controllers discover each other on the network and a technique called "multimaster replication" propagates changes to each. Changes are given an Update Sequence Number, akin to a time stamp. If a controller receives conflicting data from multiple controllers, it uses the Update Sequence Number to decide which is the latest.

Active Directory domain names can be identical to Internet names. An organization with domains such as Sales and Finance would have to establish trust relationships to share resources between them. With an Active Directory name like foo.com, these domains become sales.foo.com, finance.foo.com, eliminating trust relationships because the domains are now within the Active Directory hierarchy.

—Ryan Maley is a Microsoft Certified Systems Engineer and the information systems manager for a Midwestern manufacturing firm.

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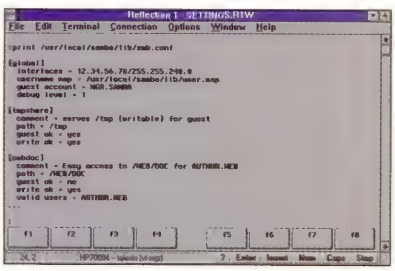
Win The Battles, But Don't Lose The Interoperability War S-37

The war between UNIX and the HP 3000 may have ended in a tie. Now the battles to be fought concern getting them to work well together on all fronts.

Doin' The Samba On The HP 3000 . . . . . .S-38

In the connected world of the 90's, no server should be an island. Samba/iX, a Windows NT interoperability utility now included with MPE/iX 6.0, will teach your HP 3000 some new connectivity steps.



Samba/iX configuration file

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Win the Battles, But Don't Lose The Interoperability War

The HP 3000 is here to stay. Harry Sterling says so. Winston Prather says so. And by the way, Lew Platt says so. Explicitly endorsed by its GM, R&D team and the corporate head honcho, the best operating system in the universe will still run on the best hardware platform on this planet.

For awhile there, it seemed like the War of the Roses, with the Yorks of UNIX versus the Lancasters of HP 3000 for the computing throne. A long standing battle that began when Wim Roelandts was a HP GM. At that time, the HP 3000 was rumored to be all but toast. UNIX was the technology solution du jour. But the pure HP 3000 hearts and minds eventually overcame the technology tide, turned off the toaster and turned on the after-burners. That's why the HP 3000 stands ready for the next twenty-five years — at least. For the steadfast group of HP 3000 users, it just doesn't get any better than that.

THE INTEROPERABILITY BOP

But now that the battle royal has been settled, the War of Interoperability remains to be won. There's any number of Windows desktops and Windows NT servers — to pick on the obvious — needing to be won over by your HP 3000. How you win those individual interoperability conflicts, of course, is up to you. But because getting *all your business applications to work together* is important, it's one struggle I'm sure you don't want to lose. In fact, it's most likely going to help you keep your HP 3000 around that much longer.

Playing and working well with others is a high-profile job skill these days for CIOs and IT Managers; if you don't think it extends to technology and IT functions, you're sadly mistaken. Resource Sharing for MPE/iX is a HP product for file and print that's now been discontinued. But you've got a head start with the HP 3000's POSIX-compliance. Samba/iX is another weapon you'll want at your disposal.

SAMBA ROCKS

Our HP 3000 Solutions' focus this month, Samba/iX was created by Andrew Tridgell and ported to the HP 3000 by HP engineer Lars Appel. As Associate Editor, Ken Deats reports in his sidebar to our piece by HP's Alvina Nishimoto, don't expect Tridgell, an Australian native, to be on the Forbes list of richest worldwide moguls anytime soon.

But HP 3000 users don't have to understand the book value (or is it "box value") of — pizza — to appreciate what Samba/iX can do. As freeware, the value speaks for itself.

Next month, you'll learn more about HP 3000-LAN interoperability from Dave Herbert at WRQ. And in the near future, we'll look at HP 3000 interoperability from a database access perspective by taking a closer look at M.B. Foster's, ODBCLink.

In the meantime, I would like to hear from you. Tell me what HP 3000 interoperability solutions you want to hear about? Are we on the right track to help you with your HP 3000? Send your responses to *hp3ksolutions@hppro.com.*

George A. Thompson
Editor-in-Chief

Doin' The Samba On The HP 3000

UNIX/NT File And Print Services Software Connects You With The Outside World

Alvina Nishimoto
HP CSY R&D Internet Program Manager

Samba, one of the most popular UNIX and Windows NT file and print sharing tools, has been ported to the HP 3000 (and is now included in the recently released MPE/iX 6.0). As such, Samba/iX provides an easy mechanism for file and print sharing between HP 3000, NT and other platforms using Microsoft's Server Message Block (SMB) networking protocol.

Samba/iX contains programs and utilities that provide both client and server functionality. The SMB services that allow the HP 3000 to act as a file and print server are provided by the SMBD application. Meanwhile, another server application, NMBD, allows processing of NetBIOS name service requests, advertises the Samba server on the network, helps clients locate the server and controls "browsing," the ability to view resources on a Windows Network. Although not required for file and print functionality, NMBD does provide the ability to see HP 3000 disk and/or printer services as part of the Windows 95/NT network neighborhood.

SMBCLIENT allows the HP 3000 to act as a client for SMB servers. This utility allows users to send print jobs to printers shared on SMB servers, query remote machines for their resources and send WinPopup messages.

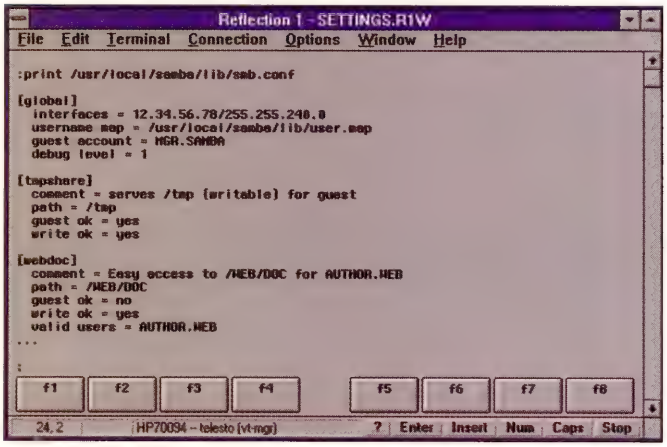


Figure 1. Setting up a Samba configuration file on a server.

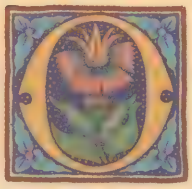
Serving Up Samba

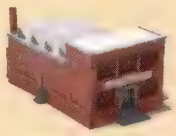
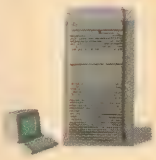
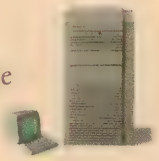
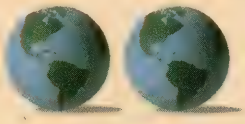
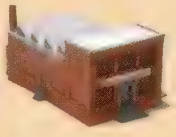
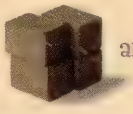
To set up a HP 3000 as a Samba server, first create the smb.conf configuration file. This file controls the configuration for both SMBD and NMBD and defines which directory trees of the MPE file system should be accessible by clients. (Figure 1 shows an example.)

There is a section for global parameters and defaults and one section for each service or share. In these sections are defined attributes like associated directory path, read or write access, which users are allowed to access this share etc. This file is read frequently by both SMBD and NMBD, allowing configuration changes to become available without the need to restart server programs.

The smb.conf file contains *at least 165 possible configuration values*. A GUI-based configuration tool called bbSAT, provided by HP 3000 Channel Partner B+B Unternehmensberatung (Bad Dürkheim, Germany; www.bb-online.de), is available for downloading from the HP Jazz Web site (jazz.external.hp.com). In addition, the book "SAMBA Integrating Unix and Windows" by John D. Blair (Specialized Systems Consultants, January, 1998; available at www.amazon.com or www.clbooks.com) describes most of these configuration values in detail. Additional documentation can be found in the man pages and HTML pages included with MPE/iX 6.0.

On the HP 3000, a listener process (started either under INETD or as a separate job) waits for incoming client con-



nce upon a time, there was a  that didn't know what to do with its . Everyone knew that the  had been reliable, but that perhaps it was for a change. So the had a meeting with the responsible for the . The thought that the might need to invest in something completely new with incredibly advanced features, while the the  already in place. Luckily, the and the discovered that D+R gave them the best of  , by providing them with new distribution along with an interface to the that was by the . In the end, the  was able to sell more  and then had a big

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nection requests and creates child processes (servers) as needed. The server side validates the client's username and password and grants access to the requested share if appropriate. A share may also be configured to allow guest access (i.e. without a valid username/password pair specified by the client). This is similar in concept to anonymous ftp.

Figure 2 shows how to connect to server shares using the Windows File Manager. The Disk menu includes an item, Network Connections, which brings up a small window following the File Manager window. Either connect a network drive by explicitly typing in a share name (with

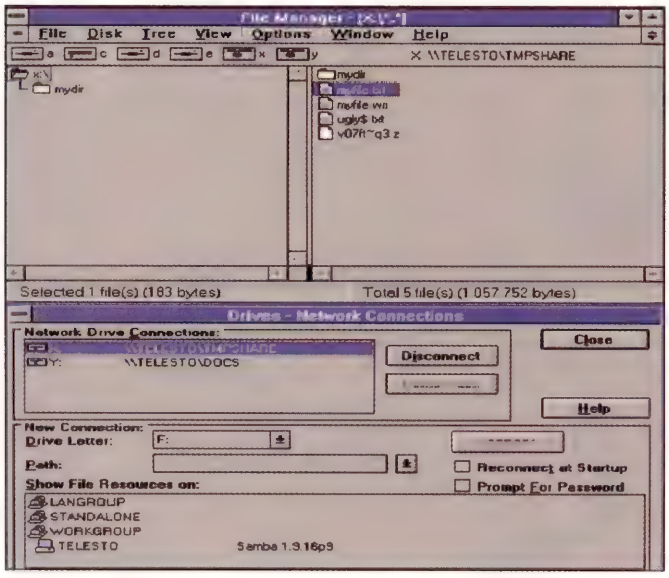

Figure 2. The view into a Samba server through Windows File Manager.

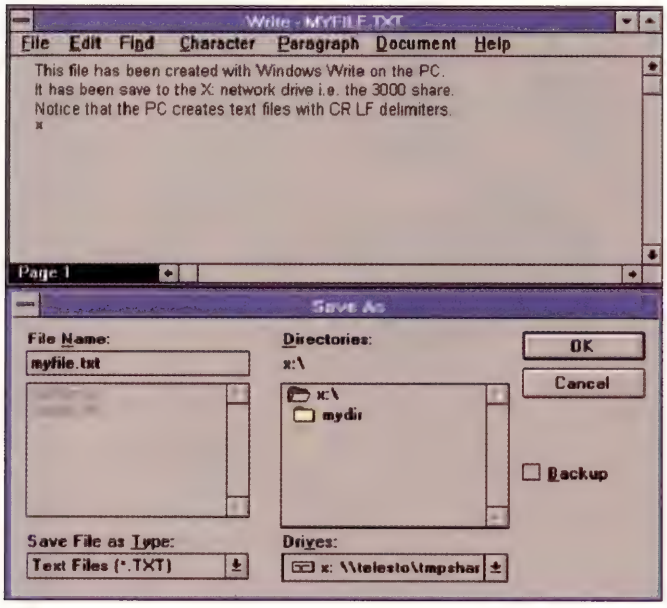

Figure 3. Creating and saving files from the client side to the Samba server.

THE PIZZA PAY OFF

The Samba freeware utility was written by Andrew Trigdell in December 1991, then a PhD student in the Computer Sciences Laboratory at the Australian National University, (Canberra, Australia). Ongoing support is handled by Tridgell and his "Samba Team," still in Australia.

30 Minute Guarantee?

While they don't accept monetary compensation for the product, they do take pizza. As it says on their Web-site (samba.anu.edu.au/samba), "Andrew doesn't ask for payment, but he does appreciate it when people give him pizza. This calls for a little organization when the pizza donor is twenty thousand kilometers away, but it has been done."

Method 1: Ring up your local branch of an international pizza chain and see if they honor their vouchers internationally. Pizza Huts do, which is how the entire Canberra Linux Users Group got to eat pizza one night, courtesy of someone in the U.S.

Method 2: Ring up a local pizza shop in Canberra and quote a credit card number for a certain amount, and tell them that Andrew will be collecting it (don't forget to tell him.) One kind soul from Germany did this.

Method 3: Purchase a pizza voucher from your local pizza shop that has no international affiliations and send it to Andrew. It's completely useless but he can hang it on the wall next to the one he already has from Germany.

Method 4: Air-freight him a pizza with your favorite regional flavors. It will probably get stuck in customs or torn apart by hungry sniffer dogs but it will have been a noble gesture.

New Samba Versions

Lars Appel, a software engineer at HP's German Response Center, performed the port to MPE/iX in December, 1996. That version was beta tested by Easy Does It Technology's (Richland, Wash.) owner and longtime HP 3000 consultant Michael Gueterman.

Gueterman explains that the version of Samba/iX bundled with MPE/iX 6.0 is still Appel's original port, specified as version 1.9.18P.9 — almost two years old. He, along with Joe Geiser, a consultant with CSI Business Solutions (Langhorne, Pa.), has "moved the MPE/iX version up to the existing standard" of Tridgell's team (version 1.9.18P.10).

Information on this newer (still freeware) release of Samba/iX is available at either Gueterman's Web site (www.sambaix.com), or CSI's site (www.csillc.com).

—Ken Deats
Associate Editor

the \\server\share syntax) or by using the browsing pane of the same window. The browsing feature requires the NMBD server process to be running on the HP 3000. If not, or, if the HP 3000 is not on the same PC subnet, an explicit share name must be entered.

Accessibility To PC Apps

Once connected to the server shares, the network drives are accessible to regular PC applications. Figure 3 shows the process of creating a text file in the Windows Write editor and saving it to the X: drive as myfile.txt. All files and directories on such a network drive actually reside on the HP 3000 in the MPE file system (typically using the HFS name space).

Figure 4 shows how to access HP 3000-based printers using Samba. With printer sharing, the client creates a file on the server directory associated with the printer and lets the server process trigger a configurable command to push the file to the MPE spooler or other options.

Network printers, PC serial printers and both UNIX and PC print servers are accessible to HP 3000 users as long as they run the SMB protocol. Using the SMBCLIENT utility MPE spool files may be piped to other printers in the network. ◆

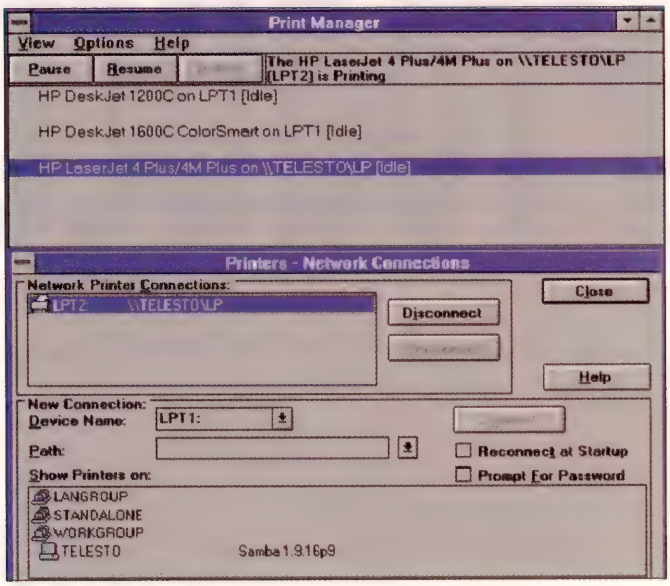

Figure 4. Printing to a Samba printer through Windows Print Manager.

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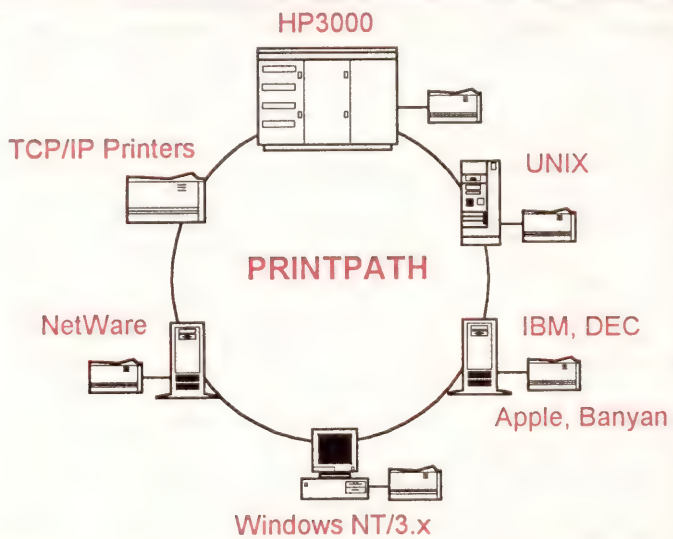

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➤Contact Pacific Gold Coast Corp., Locust Valley, NY at (800) 732-3002.

SentinelLM License Manager 6.1

SentinelLM 6.1 is a software-based license manager that allows applications to be licensed utilizing "point and click" technology. Developers can add license enforcement capabilities to any Windows or UNIX application. It includes the SentinelLM-Shell that allows developers to protect 32-bit applications without coding.

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➤Contact Rainbow Technologies Inc., Irvine CA 92618 at (714) 450-7300.

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➤Contact WebLogic, San Francisco, CA at (415) 659-2600.

DESKTOPS AND SERVERS

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➤Contact Innoventions, Inc., Houston, TX at (281) 879-6226.

MESSAGING AND E-MAIL

VB RecMAIL 1.0

VB RecMAIL 1.0 is a DLL that assists

Visual Basic programmers in developing applications that can retrieve e-mail from any POP3 e-mail server. In combination with PSP's VB SendFORM 2.0 (PSP's SMTP programming tool), Visual Basic programmers can create fully functional e-mail client applications for Win 95, Win 98 and Win NT environments as well as create Web-based e-mail functionality for Internet Server applications.

VB RecMAIL and VB SendFORM from PSP aid Visual Basic developers in developing e-mail applications that are fast, flexible and expansive. It includes 11 functions that give programmers the ability to manipulate e-mail in several different ways.

➤Contact Pacific Software Publishing, Inc., Redmond, WA at (800) 232-3989.

1-Step FaxHaven 5.0

HTF Consulting's 1-Step FaxHaven 5.0 is designed to work on all Intel platforms, from 8088-based DOS platforms to Pentiums. FaxHaven works in stand-alone or command-line mode and receives and process faxes as well as produce and transmit them on your PC.

It requires no special equipment other than a FAX modem and includes a utility for converting among image files in a variety of formats: FAX/PCX/DCX and several types of TIFF. There is a utility for converting image formats to printer formats: ECL/PCL/QUM. FaxHaven supports Class 1, Class 2 and CAS modems and all classes of video monitors from Hercules to Super VGA. 1-Step FaxHaven costs $65.

➤Contact HTF Consulting, Alameda, CA at (510) 521-1689.

New LDAP/X.500 Directory-Based Internet

EMMA (Enterprise Messaging Management and Administration), is a specialized directory client, which manages messaging configuration information held in an LDAP/X.500 enterprise directory. These tools enable system administrators to configure and manage large-scale enterprise-wide messaging systems. The configuration information is shared between messaging servers, eliminating data duplication and management overhead. The full suite of Isode R4.0 messaging servers has been developed in parallel to support the directory-based configuration managed by EMMA.

EMMA provides other benefits including: a choice of graphical or scripting tools; Flexibility for complex configuration requirements; the facility to produce customized templates; Messaging system monitoring (SNMP); and security features.

➤Contact Isode Inc, Austin, TX at (512) 231-8993.

MULTIMEDIA

ACD Systems' PicaView 32 1.3

PicaView 32 1.3, a windows explorer add-on that previews and manipulates images in a document's context menu, has added these features: rotate JPEG images with no image degradation; handles BMP, DCX, GIF, IFF-ILBM, JPEG, PCX, Photo-CD, SoftImage PIC, PNG, PhotoShop PSD; SGI, TGA, TIFF and WMF image formats;

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configurable image printing with print preview and contact sheet capability; set and restore the desktop wallpaper; single or batch format conversion of images to BMP, PCX, JPEG (including progressive JPEG) or TGA.

PicaView 32 v. 1.3 costs $26 ($34 on a disk) and runs on Windows 95/98/NT4.

➤Contact ACD Systems Ltd, Arlington, TX at (250) 382-5828.

New CryptaPix 2.0

Briggs Softworks' CryptaPix 2.0 is a graphics tool that allows PC users to view and maintain image file collections with encryption capabilities inside its interface.

New is a redesigned interface with file management enhancements that allow users to copy, move, delete, rename and adjust properties of image files. Image manipulation functions such as resize, crop, rotate and mirror have also been added. The revamped thumbnail system lets users manage image files visually without having to remember individual file names.

CryptaPix supports most popular raster formats including BMP, GIF, JPG, PCX, PNG and TIF. It is available for the Windows 95, 98, and NT for $29 plus S&H.

➤Contact Briggs Softworks, Houston TX at (281) 537-1435.

NETWORK INTEGRATION

E-Comms, Inc.'s E-Power 48

E-Power 48 is a DC power switching device designed for use by ISPs, telephone companies and their customers operating unmanned, remote LAN hardware powered by 48 Volt Direct Current (VDC). Up to six remote LAN hardware devices, such as routers, bridges and fans, can be plugged into each E-POWER 48, enabling the network administrator to execute power switching in the event of a failure.

It's designed to work with E-Comms' E-Commander network controller. From a single workstation, the administrator can address one or more E-Commander and E-Power 48 units, stationed remotely, for real-time monitoring and control of a wide variety of LAN hardware. E-Power 48 sells for $4,595.

➤Contact E-Comms, Inc., Gig Harbor, WA at (253) 857-3399.

SERVICES AND SUPPORT

Commercial Release of Portico Service

Technical Service Resources, Inc., has announced the release of Portico Virtual Assistant Service. The service gives mobile executives access to voice mail, email, faxes, address book, calendar, news articles, and stock quotes via a telephone.

It's accessible through telephones or standard Web browser. Using magicTalk, subscribers can ask Portico to read an email, return a phone call or make an appointment — even interrupt the conversation — the same way they to talk to another person. MagicTalk prioritizes the information subscribers receive from a variety of sources. MagicTalk also allows subscribers to act upon, as well as access their important information. Monthly service charges range from $19.95 for 60 minutes to $149.95 for 1,300 minutes.

➤Contact Technical Service Resources, Inc., Bedford TX at (972) 446-3985.

STORAGE

MTI's Gladiator Fibre Channel Multiplexer

The Gladiator FCM is a Fibre Channel to SCSI router that attaches SCSI-based MTI Gladiator RAID array storage systems to Fibre Channel hosts.

It supports 100MB/second Fibre Channel attachments that are 2.5 to 5 times faster than SCSI. It permits connections between host and array to be extended from 25 meters to 6.2 miles. With the addition of an FCM, MTI RAID arrays previously supporting two to 16 hosts can now accommodate the storage requirements of up to 30 hosts. With host-based software, it is possible to configure MTI Gladiator RAID arrays for Business Critical Remote Mirroring.

The Gladiator FCM has a list price of $45,570.

➤Contact MTI Technology Corp., Anaheim, CA at (800) 999-9MTI.

MTI's Gladiator Enterprise 3600

The Gladiator Enterprise 3600 is a new RAID array system designed for high-end data center's fault tolerant storage.

It scales to more than a terabyte of data and employs Fibre Channel serial interconnect technology. Multiple application servers can access storage consolidated in a single, large-scale array. It uses MTI's RAIDManager for managing and monitoring storage in cross-platform, client-server environments and MTI's Scalable Modular Architecture for building reusable adaptive architectures. Fault notification via e-mail or pager can be provided.

➤Contact MTI, Anaheim, CA at (714) 970-0300.

SYSTEM AND NETWORK MANAGEMENT

MIL 3's SAP Network Planner

SAP Network Planner is a new tool for predicting the impact of deploying SAP software on an enterprise network. It conducts a network assessment without affecting the production network and addresses critical service level parameters such as response times and provides a framework for capacity planning and scalability analysis. Existing network traffic and detailed protocol interactions are modeled to produce application response time predictions.

SAP Network Planner uses MIL 3's OPNET Planner 5.0 interface, adding SAP-specific features, such as explicit representation of the three-tier client-server architecture.

➤Contact MIL 3, Inc., Washington, D.C. at (202) 364-4700.

New Freevision X Server Management System

FreeVision X Server Management System is a scaleable, non-blocking solution to managing thousands of servers by an unlimited number of users. It carries keyboard, video and mouse (kvm) signals from each server to a signal matrix, which in turn connects to the system users' desktop-based kvm via industry-standard high-bandwidth category 5 cabling. The user does not require a PC on the desktop to access the servers, saving space, PC costs and increasing network security.

It supports platforms such as PC servers, UNIX workstations and midrange UNIX systems.

➤Contact C-C-C Group Inc. (USA), Farnborough, U.K. at (212) 317-9800.

Lund Adds Vantage

Lund Performance Solutions has added Vantage's Console Access Technology from ASP Technologies to enable network administrators to manage a wide variety of computer systems, application software and communications from a single seat.

Lund is a provider of performance, capacity planning and system management solutions. Adding Vantage will provide monitoring processes that examine streams of console messages generating by computing resources, trap anticipated events and execute appropriate responses. Routine tasks may be automated by rules-based scheduling. Vantage performs all its activities on the host workstation and requires no proprietary software or agents.

➤Contact Lund Performance Solutions, Albany, OR at (541) 926-3800. ◆

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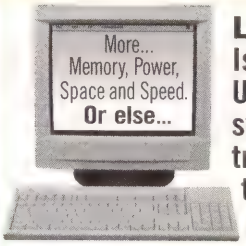

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NEW FROM HP

WORKSTATIONS

Kayak Keeps Kloning

Intel's latest 450MHz Pentium II processor has found a home in HP's latest addition to its Kayak family of PC workstations.

The XA-s, featured in either a desktop or minitower model, comes with 128MB of 100MHz SDRAM (expandable to 768MB) and 7,2000 rpm 10.1GB Ultra ATA or 9.1GB Ultra Wide SCSI hard drives. The XU features up to two processors, CL2 ECC SDRAM, expandability to 1GB, HP FastRAID and Fast Wide Ultra SCSI 10,000 rpm 4.5GB or 9GB Seagate Cheetah drives. Both include a Matrox Millennium G200 AGP video card for 2D graphics or an ELSA Gloria Synergy+ 3D graphics card.

The XW, for design professionals and 3D animators, features 10,000 rpm Fast Wide Ultra SCSI hard drives, independent SCSI controllers for additional memory bandwidth and optional HP FastRAID for I/O acceleration. XU workstations also include UNIX and Windows NT interoperability software for seamless integration across environments.

All models also include Intel's 440BX AGPset with 100MHz front-side bus.

url:www.hp.com/go/kayak

NETWORK MANAGEMENT

Switching Prices

The price per port keeps plunging in HP's wiring closet with the addition of new plug-and-play hubs that push the cost down as low as $10 per port and desktop switches that start at $55 per port.

The new ProCurve 10/100 Hub-12 and Hub-24 can interconnect a mix of 10Mbps and 100Mbps workstations, servers and peripherals with either 12 or 24 dual-speed, autosensing ports and a cascade port for expanding networks through interconnected hubs. The 12 port model sells for $649 or $54 per port and the 24 port sells for $999 or $42 per port. ProCurve models 100Base-T Hub-8 and 10Base-T Hub-8 sell for $229, $30 per port and $79, $10 per port respectively.

HP's managed ProCurve desktop switches have added the 212M and 224M, both of which come bundled with TopTools for Hubs & Switches software for management, monitoring and performance analysis. Both are fixed-configuration with either 12 or 24 10Base-T ports and a 10/100 autosensing port for high-speed uplink. A high-speed transceiver slot provides and additional 100Mbps Ethernet UTP or fiber connection. The 12-port 212M sells for $829 or $64 per port and the 24-port 224M sells for $1,379 or $55 per port.

url:www.hp.com/go/network_city

PERIPHERALS

New Color Copiers Now Shipping

The new HP Color Copier 145 and 155, announced in June, provide professional-photo-quality color capabilities, convenience and cost and time savings to small businesses for the price of a comparable monochrome copier. The copiers come with a 30-page automatic document feeder for additional productivity. They are available at HP-authorized retailers at prices starting at about $799. The products join HP's current line of color copiers, which includes the HP Color Copier 140 and 150 at prices starting at about $599.

url:www.hp.com/go/copiers

CapShare Captures Mobile Documents

HP has introduced the HP CapShare 910 information appliance, a portable-CD-player-sized device that lets mobile PC users capture, store and share paper documents.

Using the 12.5 ounce appliance with a free-form, swiping motion, users can capture up to 50 letter-size pages in black and white from virtually any flat document and a variety of media. CapShare page processing re-creates the document in as little as six seconds and shows a thumbnail of the image on the built-in liquid crystal display. Once captured, the document can be sent directly to a printer or smart wireless handheld device via infrared port, or to a PC for e-mailing or e-faxing.

Shipments are expected to begin Dec. 1 with an introductory price of about $699.

url:www.capshare.hp.com

SERVICES

Frequent Flyer Kiosks

HP and American Airlines are combining on creating business centers designed to address the communications needs of frequent business travelers. Mobile professionals will have the ability to fax, print, e-mail or access the Internet from an American Airlines' Admirals Club.

HP technology kiosks will be introduced in the seven U.S. airports with the heaviest traffic. They will be kept up to date with the latest HP technology, like wireless printing, giving business executives the chance to test-drive the products.

Admirals Club members will have full use of the HP business centers and technology kiosks at no cost.

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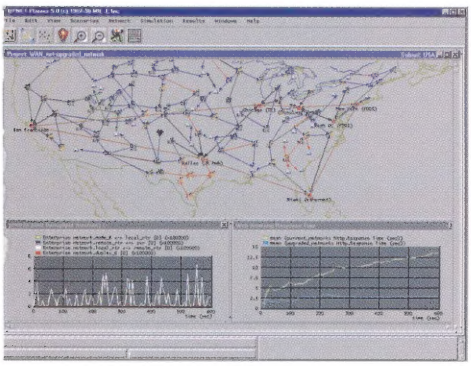

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